

HANDBOUND
AT THE



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Ontario Legislative Assembly
L **SESSIONAL PAPERS.**

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Second Session of Eleventh Legislature

OF THE

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SESSION 1906.

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1906

LIST OF SESSIONAL PAPERS.

ARRANGED ALPHABETICALLY.

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Accounts, Public.....	1	<i>Printed.</i>
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Agricultural and Experimental Union, Report.....	15	"
Archives, Report.....	41	"
Asylums, Report.....	38	"
Asylums, Perquisites of Officials.....	58	<i>{ Printed for distribution to Members only.</i>
Ballot Papers, fac similes	63	<i>Not printed.</i>
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Births, Deaths and Marriages, Report.....	9	"
Brockville License Commissioners, Correspondence.....	6	<i>Not printed.</i>
Canadian Improvement Company, Agreement.....	80	<i>Printed.</i>
Central Prison, Rope and Cord Contract.....	65	"
" Woodware Contract.....	73	"
Children, Neglected, Report.....	43	"
Colonial Investment Company, Assets.....	78	<i>Not printed.</i>
Colonization, Report	32	<i>Printed.</i>
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Dairymen's Association, Report.....	22	<i>Printed.</i>
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Equitable Loan Company.....	78	<i>Not printed.</i>
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Petewawa, Liquor License, Correspondence.....	74	“
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- No. 1. Public Accounts of the Province for the year 1905. Presented to the Legislature, February 27th, 1906. *Printed.*
- No. 2. Estimates for the service of the Province until the Estimates of the year are finally passed. Presented to the Legislature 22nd February, 1906. *Not Printed.* Estimates for the year 1906. Presented to the Legislature 5th March, 1906. *Printed.* Estimates (Supplementary) for the year 1906. Presented to the Legislature, 9th May, 1906. *Printed.*
- No. 3. Report of the Minister of Lands, Forests and Mines for the year 1905. Presented to the Legislature 11th April, 1906. *Printed.*
- No. 4. Report of the Vegetable Growers' Association for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*

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- No. 5. Report of the Bureau of Mines for the year 1905. Presented to the Legislature, 24th April, 1906. *Printed.*
- No. 6. Report of the Commissioners of the Queen Victoria Niagara Falls Park, for the year 1905. Presented to the Legislature, 27th February, 1906. *Printed.*
- No. 7. Report of the Minister of Public Works for the year 1905. Presented to the Legislature, 4th April, 1906. *Printed.*
- No. 8. Report of the Inspectors of Factories for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 9. Report relating to the Registration of Births, Marriages and Deaths for the year 1904. Presented to the Legislature, 20th February, 1906. *Printed.*

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- No. 10. Report of the Inspector of Insurance for the year 1905. Presented to the Legislature, 19th March, 1906. *Printed.*

- No. 11. Loan Corporations, Statements by Building Societies, Loan and other Companies, for the year 1905. Presented to the Legislature, 19th March, 1906. *Printed.*

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- No. 12. Report of the Minister of Education, for the year 1905, with the Statistics of 1904. Presented to the Legislature, 20th February, 1906. *Printed.*
- No. 13. Auditors' Report to the Board of Trustees, University of Toronto, on Capital and Income Accounts, for the year ending 30th June, 1905. Presented to the Legislature, 17th February, 1906. *Printed.*
- No. 14. Report of the Ontario Agricultural College and Experimental Farm, for the year 1905. Presented to the Legislature, 21st February, 1906. *Printed.*

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- No. 15. Report of the Ontario Agricultural and Experimental Union of the Province, for the year 1905. Presented to the Legislature, 8th March, 1906. *Printed.*
- No. 16. Report of the Fruit Growers' Association of the Province, for the year 1905. Presented to the Legislature, 21st February, 1906. *Printed.*
- No. 17. Report of the Fruit Experimental Stations of the Province, for the year 1905. Presented to the Legislature, 14th March, 1906. *Printed.*
- No. 18. Report of the Inspector of Fumigation Appliances of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 19. Report of the Entomological Society, for the year 1905. Presented to the Legislature, 21st February, 1906. *Printed.*
- No. 20. Report of the Bee-Keepers' Association of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 21. Report of the Poultry Institute of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 22. Reports of the Dairymen's Associations of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*

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- No. 23. Reports of the Live Stock Associations of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 24. Report on the Fruits of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 25. Report of the Farmers' Institutes of the Province, for the year 1905. Presented to the Legislature, 11th April, 1906. *Printed.*

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- No. 26. Report of Ontario Fairs and Exhibitions of the Province, for the year 1905. Presented to the Legislature, 28th February, 1906. *Printed.*
- No. 27. Report of the Commissioner of Highways, for the year 1905. Presented to the Legislature, 10th April, 1906. *Printed.*
- No. 28. Report of the Bureau of Industries of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 29. Report of the Bureau of Labour, for the year 1905. Presented to the Legislature, 24th April, 1906. *Printed.*
- No. 30. Report of the Ontario Game Commission, for the year 1905. Presented to the Legislature, 22nd March, 1906. *Printed.*
- No. 31. Report of the Department of Fisheries, for the year 1905. Presented to the Legislature, 28th March, 1906.

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- No. 32. Report on Colonization, for the year 1905. Presented to the Legislature, 9th May, 1906. *Printed.*
- No. 33. Report of the Inspector of Division Courts, for the year 1905. Presented to the Legislature, 9th March, 1906. *Printed.*
- No. 34. Report of the Inspector of Legal Offices, for the year 1905. Presented to the Legislature, 14th March, 1906. *Printed.*
- No. 35. Report of the Inspector of Registry Offices, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 36. Report of the Provincial Board of Health, for the year 1905. Presented to the Legislature, 21st February, 1906. *Printed.*
- No. 37. Report of the Secretary and Registrar of the Province, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*

- No. 38. Report upon the Lunatic and Idiot Asylums of the Province, for the year ending 30th September, 1905. Presented to the Legislature, 21st February, 1906. *Printed.*
- No. 39. Report upon the Prisons and Reformatories of the Province, for the year ending 30th September, 1905. Presented to the Legislature, 21st February, 1906. *Printed.*

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- No. 40. Report upon the Hospitals and Charities of the Province, for the year ending 30th September, 1905. Presented to the Legislature, 21st February, 1906. *Printed.*
- No. 41. Report upon the Archives of the Province, for the year 1905. Presented to the Legislature, 30th April, 1906. *Printed.*
- No. 42. Report of the Royal Commission on the University of Toronto. Presented to the Legislature, 6th April, 1906. *Printed.*
- No. 43. Report of Work relating to Neglected and Dependent Children of Ontario, for the year 1905. Presented to the Legislature, 20th April, 1906. *Printed.*

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- No. 44. Report upon the Inspection of Liquor Licenses, for the year 1905. Presented to the Legislature, 20th February, 1906. *Printed.*
- No. 45. Report of the Provincial Municipal Auditor, for the year 1905. Presented to the Legislature, 7th May, 1906. *Printed.*
- No. 46. Supplementary Return from the Record of the several Elections in the Electoral Divisions of East Nipissing, Kingston and North Toronto, since the General Elections on January 25th, 1905, shewing: (1) The number of Votes Polled for each Candidate in the Electoral District in which there was a contest; (2) The majority whereby each successful Candidate was returned; (3) The total number of votes polled in each District; (4) The number of votes remaining unpolled; (5) The number of names on the Voters' Lists in each District; (6) The population of each District as shewn by the last Census. Presented to the Legislature, 2nd April, 1906. *Printed.*
- No. 47. Report upon the state of the Library. Presented to the Legislature, 22nd March, 1906. *Not printed.*
- No. 48. Report of the Temiskaming and Northern Ontario Railway Commission, for the year 1905. Presented to the Legislature, 1st March, 1906. *Printed.*
- No. 49. Report of the Hydro-Electric Power Commission of the Province. Presented to the Legislature, 11th April, 1906. *Printed.*

- No. 50. Copy of Order in Council approving of certain Regulations under Section 22 of the Succession Duties Act. Presented to the Legislature, 19th February, 1906. *Not printed.*
- No. 51. Copies of Orders in Council under the provision of Section 9, Chapter 38, 1 Edward VII., *re* Education. Presented to the Legislature, 20th February, 1906. *Not printed.*
- No. 52. Return, in part, to an Order of the House of the eleventh day of May, 1905, for a Return of, 1. Copies of all correspondence, documents, memoranda, instructions and circulars in connection with the appointment of license commissioners and inspectors for the present year, or in connection with their administration of their offices. 2. The names of all license inspectors who were dismissed, or have resigned during the present year and the reasons for their dismissals, or resignations, with the names of those appointed in their places. Presented to the Legislature, 20th February, 1906. Mr. *McDougal*. *Not printed.*
- No. 53. Return to an Order of the House of the second day of May, 1905, for a Return shewing:—1. The original endowment or grants to King's College, Toronto, in (a) Lands. (b) Money. 2. The amount derived from sale of land by King's College, or University College, Toronto, and statement of lands still owned by University College. 3. Statement shewing subsequent Legislative endowments, or grants, to University College or Toronto University in lands, or money. 4. (a) The property or funds at present held by, or in trust, for the University of Toronto, or University College, or any of the affiliated Colleges. (b) The present annual revenue from such property or funds. 5. Statement of expenditures, annually, on buildings and equipment, salaries and maintenance of Toronto University or University College for the last ten years. 6. The annual amount at present required for salaries and expenses of maintenance. 7. Statement of all legislative grants, or expenditures, for University purposes at any city in Ontario, other than Toronto. Presented to the Legislature, 20th February, 1906. Mr. *Calder*. *Not printed.*
- No. 54. Return to an Order of the House of the third day of May, 1905, for a Return shewing, by Counties, the amounts due the Province on account of unpaid balances, due on sales of Crown Lands, from Confederation down to December 31st, 1904. Presented to the Legislature, 20th February, 1906. Mr. *Smith (Sault Ste. Marie)*. *Not printed.*
- No. 55. Return to an Address to His Honour the Lieutenant-Governor, of the eighteenth day of May, 1905, praying that he will cause to be laid before the House a Return of copies of all Orders-in-Council, documents, correspondence and memoranda regarding the withdrawal of lots in the townships of McClure, Herchel, Dungannon, Mount Eagle, Mayo, Limerick, Cardiff, Farraday and Chandos, from sale or location, or other disposition, for a period of twenty-five years. Presented to the Legislature, 28th February, 1906. Mr. *Smyth*. *Not printed.*

- No. 56. Copies of Orders-in-Council under ss. 2 of section 84 of the Surrogate Courts Act. Presented to the Legislature, 2nd March, 1906. *Not printed.*
- No. 57. Copy of Order-in-Council authorizing the payment of surplus Surrogate fees to His Honour Judge Jamieson, Junior Judge of Wellington. Presented to the Legislature, 6th March, 1906. *Not printed.*
- No. 58. Return to an Order of the House of the first day of March, 1906, for a Return shewing, 1. The names of all officers, attendants, or other officials of the Asylums, Prisons and other Public Institutions of the Province, under the Department of the Provincial Secretary, receiving perquisites, allowances or payments of any nature whatever, whether in cash, goods or supplies, beyond the amount voted for their salaries in the Estimates. 2. The nature and amount of such perquisites, allowances or payments received by such officer or other official. Presented to the Legislature, 6th March, 1906. Mr. Dunlop. *Printed for distribution to Members only.*
- No. 59. Return to an order of the House of the twenty-seventh day of February, 1906, for a Return shewing—1. How many persons, in Ontario, were commissioned to issue Marriage Licenses on the 7th day of February, 1905. 2. How many of such persons have had their authority revoked since such date. 3. How many persons have been commissioned to issue Marriage Licenses, in Ontario, between the 7th day of February, 1905, and the 7th day of February, 1906. Presented to the Legislature, 7th March, 1906. Mr. Ross. *Not printed.*
- No. 60. Calendar of the Ontario School of Practical Science for the year 1906-7. Presented to the Legislature, 16th March, 1906. *Printed for distribution only.*
- No. 61. Return to an Order of the House of the fourteenth day of March, 1906, for a Return of Copies of all correspondence, papers and documents between the Attorney-General, or other Member of the Government, and A. M. Panton and others, in the year 1903, in any way relating to the action at law brought by Mr. Scully, against Mr. Peters for malicious prosecution. Presented to the Legislature, 20th March, 1906. Mr. Torrance. *Not printed.*
- No. 62. Return to an Order of the House of the eleventh day of May, 1905, for a Return shewing the amount received in each of the last five years for Market Fees in Cities and Towns situated in Counties in which Toll Roads exist, or have existed during the past five years. And shewing as well what reductions, if any have been made in the respective market fees by Towns and Cities situated in Counties in which Toll Roads have been abolished during the past five years. Presented to the Legislature, 22nd March, 1906. Mr. Thompson (Wentworth.) *Not printed.*

- No. 63. Return to an Order of the House of the twenty-first day of March, 1906; That the Clerk of the House, *ex-officio*, Clerk of the Crown in Chancery, do lay upon the Table of the House, facsimiles of the Ballot papers furnished to the Returning Officers and Deputy Returning Officers, and used in the recent Bye Elections in the City of Kingston and in the North Riding of the City of Toronto. Presented to the Legislature, 23rd March, 1906. Mr. *Pense*. *Not printed*.
- No. 64. Return to an Address to His Honour the Lieutenant-Governor of the sixteenth day of March, 1906, praying that he will cause to be laid before the House a Return of copies of all correspondence with the Government, or any member thereof, together with a copy of any Orders in Council, in the matter of granting Certificates to the Home Guard acting during the Fenian Raid in the year 1866. Presented to the Legislature, 27th March, 1906. Mr. *Smyth*. *Not printed*.
- No. 65. Copy of an Agreement between the Province and William Bernard Converse, of Montreal, conditioned for the manufacture of rope and cord at the Central Prison. Presented to the Legislature, 11th April, 1906. *Printed*.
- No. 66. Copies of Orders in Council under the provisions of R.S.O., 1897, Chapter 36, Section 8, *in re* Mining Divisions. Presented to the Legislature, 28th March, 1906. *Printed for distribution only*.
- No. 67. Return to an Order of the House of the sixteenth day of March, 1906, for a Return shewing the number of:—1. Part II. Junior Leaving and Junior Teacher's Certificates. 2. Part I. Senior Leaving and Part I. Senior Teacher's Certificates, and 3. Part II. Senior Leaving and Part II. Senior Teacher's Certificates, obtained at each of the following centres, at the examinations of 190-'01-'02-'03-'04 and '05, *viz.*—Barrie, Belleville, Berlin, Brantford, Chatham, Cobourg, Collingwood, Galt, Guelph, Hamilton, Kingston, Lindsay, London, Morrisburg, Ottawa, Owen Sound, Perth, Peterborough, Renfrew, Sarnia, Stratford, Toronto (Harbord Street), Toronto (Jamieson Avenue), Toronto (Jarvis Street), Harriston, Meaford, Mount Forest, Orangeville and Port Hope. Presented to the Legislature, 28th March, 1906. Mr. *MacKay*. *Not printed*.
- No. 68. Copies of correspondence in the matter of the sale of \$6,000,000 six months' Treasury Bills, at a rate of discount not exceeding four *per cent.*, and to the subsequent issue of Government Bonds or Stock. Presented to the Legislature, 29th March, 1906. *Printed*.
- No. 69. Return to an Order of the House of the twenty-third day of March, 1906, for a Return of copies of all correspondence between the Chairman of the Board of License Commissioners of the Town of Brockville; the License Inspector, or any citizen of the Town and the Government, or any Member thereof, or the

License Department, with reference to the enforcement or non-enforcement of the Liquor License Act, or to the granting, or withholding, of Licenses to the Imperial Hotel, or to Samuel Johnston. Presented to the Legislature, 3rd April, 1906. Mr. *Graham*. *Not printed*.

No. 70. Return to an Order of the House of the twenty-third day of March, 1906, for a Return showing the number of fishing licenses granted on the River Thames, east of the City of Chatham, during the years 1904, 1905 and 1906; the Revenue received each year, and whether the fish were sold in Canada or the United States, and whether the fish were taken with nets, and if so, of what description. Presented to the Legislature, 3rd April, 1906. Mr. *Ross*. *Not printed*.

No. 71. Return to an Address of His Honour the Lieutenant-Governor, of the ninth day of March, 1906, praying that he will cause to be laid before the House a Return of copies of all papers and correspondence regarding the settlement of the Indian claim of Northern Ontario, known as Treaty No. 9, together with a copy of the Treaty as finally agreed upon. Presented to the Legislature, 6th April, 1906. Mr. *Ross*. *Not printed*.

No. 72. Return to an Address to His Honour the Lieutenant-Governor, of the twenty-third day of March, 1906, praying that he will cause to be laid before the House copies of all Orders in Council, papers and correspondence in any way relating to the cancellation of the license of timber berth, Block D., Pigeon River, held by J. Murphy, which stands in the Public Accounts, 1905, page 319, as a charge of \$18,787.10. Presented to the Legislature, 10th March, 1906. Mr. *McDougal*. *Not printed*.

No. 73. Copy of an Agreement between the Province and Ellen Charlotte Scott, of Toronto, trading under the name of Taylor, Scott & Co'y, respecting the manufacture of wooden ware at the Central Prison. Presented to the Legislature, 18th April, 1906. *Printed*.

No. 74. Return to an Order of the House, of the sixth day of April instant, for a Return of copies of all correspondence between the License Inspector of North Renfrew, or any member of the Board of License Commissioners, or of any citizen of Pembroke, and the License Department, or any Member of the Government, with reference to the granting of a liquor license at Petewawa. Presented to the Legislature, 12th April, 1906. Mr. *Graham*. *Not printed*.

No. 75. Report of the Land Titles Office for the years 1903, 1904 and 1905. Presented to the Legislature, 27th April, 1906. *Not printed*.

- No. 76. Return to an Order of the House of the fourth day of April, 1906, for a Return giving a complete list of all books on the authorized list for public and high schools, with dates of authorization; names of authors; positions occupied by them; with the Royalties, or other considerations, paid to them, respecting such books and the selling price thereof, and how prices are arranged. Presented to the Legislature, 1st May, 1906. Mr. *Craig*. *Printed*.
- No. 77. Statement of distribution of Revised and Sessional Statutes, from 31st December, 1904, to 31st December, 1905. Presented to the Legislature, 1st May, 1906, *Not printed*.
- No. 78. Return to an Order of the House of the twenty-third day of April, 1906, for a Return shewing: 1. On what terms the assets of the Equitable Loan Company were taken over by the Colonial Investment and Loan Company and what percentage was paid in stock of Colonial Company to holders of terminating stock in Equitable Loan Company. 2. The names and addresses of Directors and officials of the Colonial Investment and Loan Company. 3. The names and addresses of the Directors and officials of Imperial Trusts Company. Presented to the Legislature, 7th May, 1906. Mr. *Jamieson*. *Not printed*.
- No. 79. Return to an Order of the House, of the first day of May, 1906, for a Return of copies of all correspondence between the Municipal Council of the City of St. Thomas, or any official thereof and any other person or persons, proposing to the Government, or any official thereof, to have a special audit of the books of the Municipality of St. Thomas. Presented to the Legislature, 7th May, 1906, Mr. *Macdiarmid*. *Not printed*.
- No. 80. Copy of Agreement, Deed of Trust and Guaranty, made by and between His Majesty the King and the Canadian Improvement Company and others. Presented to the Legislature, 9th May, 1906. *Printed*.

ANNUAL REPORTS
OF THE
Live Stock Associations
OF THE
PROVINCE OF ONTARIO
1905

Dominion Cattle Breeders' Association
Dominion Sheep Breeders' Association
Dominion Swine Breeders' Association
Ontario Poultry Associations
Provincial Winter Fairs
Local Poultry Associations
Canadian Horse Breeders' Association

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO



TORONTO:
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1906



WARWICK_BRO'S & RUTTER, LIMITED, PRINTERS,
TORONTO.

To the Honourable WILLIAM MORTIMER CLARK, K C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

The undersigned begs to present herewith for the consideration of His Honour the Reports of the Live Stock and Poultry Associations for 1905 : also the Reports of the Provincial Winter Fairs, the Reports of Local Poultry Associations and the Report of the Canadian Horse Breeders' Association.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1906.

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Dominion Cattle Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Cattle Breeders' Association was held in the Palmer House, Toronto, February 8th, 1906, at 9.30 a.m. The President, A. W. Smith, was in the chair.

On motion, the minutes of the last annual meeting were taken as read.

REPORT OF THE EXECUTIVE.

The Executive submitted the following report:

PROVINCIAL AUCTION SALES OF CATTLE.—During the past year Provincial Auction Sales of Cattle were held at Guelph, Ottawa and Port Perry. A sale was also held at Campbellcroft, but owing to very bad roads at that time was not as successful as it otherwise would have been.

These sales are conducted under rules proposed by the Cattle Breeders' Association and assistance is given by the Ontario Department of Agriculture to assist in advertising, and this year, to assist in paying freight on animals purchased to go to Ontario points. The object is to assist in the distribution of purebred cattle throughout the Province. The sales advertised for 1906 are Guelph, February 28th; Port Perry, March 2nd, and Ottawa, March 9th. There will be offered for sale at

Guelph—50 bulls and 24 females.

Ottawa—20 bulls and 13 females.

Port Perry—20 bulls and 8 females.

Following are particulars regarding the sales held during 1905:

Guelph—

43 bulls sold for \$3,172.50; average.....\$73.78

18 females sold for \$1,370; average 76.12

61 animals sold for \$4,542.50; average 74.77

Ottawa—

20 bulls sold for \$1,544.50; average 77.23

13 females sold for \$1,038; average 79.85

33 animals sold for \$2,582.50; average 78.26

Port Perry—

9 bulls sold for \$775.00; average 86.12

5 females sold for \$340.00; average 68.00

14 animals sold for \$1,115.00; average 79.65

Campbellcroft—

3 bulls sold for \$200.00; average 66.67

2 females sold for \$85.00; average 42.50

5 animals sold for \$285.00; average 57.00

That these sales are appreciated by those who have stock for sale is shown by the fact that there is no difficulty in getting the required number of

animals contributed for sale; and the payment of freight on stock purchased at the sales will allow for delivery to the buyers' own station at the purchase price.

WINTER FAIR, GUELPH.—The Winter Fair becomes more popular each year. The attendance is getting larger and it is gratifying to see that the practical lectures delivered in the lecture room are appreciated more than ever. This feature of the show must always receive special attention as there is no doubt that credit is due this department for the great interest taken in the show by those specially interested in agriculture.

A department of seed grain was added to the show this year. The cash prizes amounted to \$430.00. By a rearrangement of the building this department was located on the second floor. A section was also set apart for lectures on this subject. Since good seeds are of so much importance to livestock men and farmers generally this department of the fair should develop into a valuable educational feature and attract much interest.

The number of entries in the different live stock departments do not show any great increase, although most of the sections are well filled, the building perhaps containing as much stock as can be properly accommodated. It would be wise to consider, however, whether some plans should be adopted to increase the number of entries in the live stock departments. There should also be a discussion as to what subjects should profitably be discussed at the next fair. In the poultry department there is a large increase in the number of exhibits each year, and although a slight increase was made in the accommodation the poultry exhibition room was uncomfortably filled.

The following figures give information regarding entries, etc., at the last two exhibitions:—

Date.	No. of entries	Entry fees.	Total value premiums awarded.	Gate receipts.
1904	4319	\$2468.65	\$8188.50	\$1843.10
1905	5017	2846.40	8961.20	2105.70

EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.—This exhibition has been at a great disadvantage owing to the difficulty there has been in securing proper accommodation. The coming exhibition is to be held on March 5th to 9th, and it is hoped there will be a large list of entries and a good attendance. A good course of lectures is being provided which will be profitable to all who can attend.

The following are the entries and some particulars regarding the show:—

Date.	No. of entries	Entry fees.	Total value premiums awarded.	Gate receipts.
1904	1639	\$873.35	\$3173.50	\$372.80
1905	1623	712.15	3311.75	374.05

Note.—Premiums for 1905 include seed grain.

COW RECORDS.—The efforts that are now being made to arouse an interest in the keeping of cow records are worthy of support from every member of the Cattle Breeders' Association. The low average production is undoubt-

edly due to the presence in the herds of many cows that are actually losing money for their owners. It seems reasonable then that the first step towards obtaining a higher average for the Province, and better profits for the owners of individual herds, should be to weed out the unprofitable cow. The only sure method to follow in doing this is to keep a record of what each cow consumes and what she produces. The labor involved is a deterrent factor to many but they should remember that an unprofitable cow should have no place in a dairy herd.

While some of the breed associations are arranging for records being kept in herds of pure bred cattle, something should be done to try to induce the owners of other dairy herds throughout the Province to adopt a somewhat similar plan. The representatives from dairy associations on the Board of Directors could very well give this matter an earnest consideration.

FINANCIAL STATEMENT

For the year ending December 31st, 1905:

Receipts.

Cash on hand from previous year as per last report	\$ 97 66
Members' fees	350 00

\$447 66

Expenditure.

Grant to fairs from membership	\$215 00
Expenses for annual meeting	6 00
Directors' expenses	18 85
Postage and stationery	36 54
Printing	15 27
Advertising	6 75
Office expenses	8 92
Telegraph, telephone and express	7 38
Auditor	5 00

\$319 71

Cash on hand

127 95

\$447 66

Examined and found correct this 30th day of January, 1906.

(Signed) J. M. DUFF, Auditor.

All of which is respectfully submitted.

(Signed) A. W. SMITH, President.

JNO. A. MCGILLIVRAY, Vice-President.

A. P. WESTERVELT, Secretary-Treasurer.

The report of the Executive Committee was on motion adopted.

Lieut.-Col. J. A. MCGILLIVRAY made a report as a representative from the Cattle Breeders' Association at the Canadian National Exhibition. He stated that it was suggested that a Dairy Competition, based on the milk record be held at the next exposition, and wished to know the feeling of the meeting regarding it. He also stated that the Canadian National would endeavor to duplicate any prizes which were offered by the various Live Stock Associations. He further stated that he would like to have the opinion of the meeting in reference to an arena for live stock judging on the exhibition grounds. The electorate of Toronto had passed a by-law a year ago, setting apart \$102,000 for the purposes of building an arena for the exhibition of stock. There appeared to be a feeling on the part of some that it was not necessary to spend that amount of money on an arena, and unless

the Cattle Breeders and other Associations pressed the matter it was not likely an arena would be built. He thought they should pass a resolution urging upon the exhibitors the advisability of building an Arena at a very early date. Considerable discussion then took place as to the "Cow Records" mentioned in the report of the executive.

Moved by W. W. BALLANTYNE, seconded by J. G. CLARK, "That this Association approves of the suggestion of encouraging dairy tests among the herds of the Province." Carried.

Moved by JOHN McKEE, seconded by J. C. SMITH, "That in the opinion of this meeting it is desirable to have a dairy test conducted at the Canadian National Exhibition, and that a copy of this resolution be sent the Secretary of the Exhibition Board." Carried.

Moved by R. H. HARDING, seconded by J. G. FOSTER, "That the executive be the committee from this Association to the National Record Board." Carried.

Moved by WM. SMITH, seconded by R. NESS, "That the appointment of cattle judges for the Winter Fair be left to the executive." Carried.

The plan of the Hon. Mr. Monteith for forming an Advisory Board was fully discussed, and called forth much favorable comment.

On motion of Lt.-Col. J. A. MCGILLIVRAY, seconded by WM. SMITH, it was resolved, "That this Association express its appreciation and approval of the organization of an Advisory Board for live stock for the Province by the Honorable the Minister of Agriculture for Ontario, feeling sure that this board will be of great advantage to the live stock industry of this Province." It was further resolved that the secretary be instructed to send a copy of this resolution to the Minister.

OFFICERS FOR 1906.

<i>President</i>	A. W. SMITH, Maple Lodge.
<i>Vice-President</i>	Lieut.- Col. J. A. MCGILLIVRAY, Toronto.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT, Toronto.

Vice-Presidents (representing the different Provinces):—

Ontario	ARTHUR JOHNSTON, Greenwood.
Alberta	C. W. PETERSON, Calgary, Alta.
Quebec	R. NESS, Howick, Que.
Maritime Provinces	M. CUMMING, Truro, N. S.
British Columbia	F. M. LOGAN, Victoria, B. C.
Saskatchewan	G. W. GRANT WRIGHT, Regina.
Manitoba	DR. THOMPSON, Winnipeg.

Directors:

Shorthorns: JOHN ISAAC, Markham; T. E. ROBSON, Iderton. Herefords: W. H. HUNTER, The Maples; W. K. GOODING, Islington. Aberdeen-Angus: A. MCKINNON, Hillsburg; J. W. BURT, Coningsby. Galloways: Lieut.-Col. D. McCRAE, Guelph; ROBT. SHAW, Brantford. Ayrshires: H. WADE, Toronto; W. W. BALLANTYNE, Stratford. Holstein-Friesian: R. S. STEVENSON, Ancaster; G. W. CLEMONS, St. George. Jerseys: THOMPSON PORTER, Carleton Place. General Director: CHAS. CALDER, M.P.P., Brooklin. Ontario Agricultural College, Prof. G. E. DAY, Guelph; President, G. C. CREELMAN, Guelph. Live Stock Commissioner; F. W. HODSON, Ottawa.

Auditor J. M. DUFF, Guelph.

Delegates to Fair Boards:

Toronto	Lieut.-Col. J. A. MCGILLIVRAY, Toronto.
Ottawa	PETER CHRISTIE, M.P., Manchester;
	ROBERT NESS, Howick, Que.
London	T. E. ROBSON, Ilderton;
	A. W. SMITH, Maple Lodge.
Provincial Winter Fair	W. W. BALLANTYNE, Stratford;
	J. T. GIBSON, Denfield;
	JOHN BRIGHT, Myrtle.
Eastern Ontario Live Stock and Poultry Show	A. W. SMITH, Maple Lodge;
	J. H. GRIDDALE, Ottawa;
	N. F. WILSON, M.P., Cumberland.

DIRECTORS' MEETING.

A directors' meeting of the Cattle Breeders' Association was held in the Temple building, Toronto, on May 15th, 1906, at 1.30 p.m. The meeting was called for the purpose of appointing representatives to the Advisory Board in accordance with instructions contained in a letter from the Minister of Agriculture.

Owing to illness, the President, Mr. A. W. Smith, was unable to be present.

The Directors for the beef breeds met, and a motion was adopted "That the representatives for beef cattle on the Advisory Board be Arthur Johnston, Greenwood, and James Bowman, Guelph."

Directors for dairy breeds then met and selected W. W. Ballantyne, Stratford, and R. S. Stevenson, Ancaster, as the representatives for dairy cattle on the Advisory Board.

MEMBERS OF THE DOMINION CATTLE BREEDERS' ASSOCIATION.
FOR 1905-1906.

Name and Address.	Breed.	Name and Address.	Breed.
Aitcheson, And., Guelph	Grade.	Benham, J. W. & Sons, Rockwood	Shorthorn.
Armstrong, Lewis, Fergus	Grade.	Brien & Sons, E., Ridgetown.....	Shorthorn.
Armstrong, Jos., Speedside ..	Shorthorn.	Blyth, C. & G., Marden.....	Shorthorn.
Armstrong, Geo., Speedside ..	Shorthorn.	Brown, J. & Son, Galt	Shorthorn.
Argo, Wm., Eden Mills	Shorthorn.	Bolton, Frank I., Marden	Shorthorn.
Armstrong, Geo. A., Teeswater.....	Shorthorn.	Boles, Thos., Eden Mills	Shorthorn.
Amos & Son, Geo., Moffat	Shorthorn.	Burnett, W. A., Salem	Shorthorn.
Acres, J. G., Vernon	Holstein-Friesian.	Barnett, Jas. A., Brooklin.....	Shorthorn.
Abbott, Fred., Harrietsville.....	Holstein-Friesian.	Baker, Edward, Winchester.....	Shorthorn and Holstein-Friesian.
Armstrong, M., Tilsonburg	Holstein-Friesian.	Bowman, Jas., Guelph	Holstein-Friesian.
Arnold, J. B., Eastons' Corners ..	Holstein-Friesian.	Burt, J. W., Coningsby	Aberdeen-Angus.
Atkinson, A. B., Steveston.....	Holstein-Friesian.	Bell, J. J., Waverley	Aberdeen-Angus.
B. C.	Holstein-Friesian.	Binnie, James, Erin	Aberdeen-Angus.
Anderson, Wm., Lyn	Holstein-Friesian.	Bryne, John A., West London ..	Aberdeen-Angus.
Ashby, Antonie, Marieville, Que.	Holstein-Friesian.	Broadfoot, T. B., Fergus	Aberdeen-Angus.
Agricultural School, L'Assomption, Que.	Ayrshire.	Baird, Chas., Motherwell	Holstein-Friesian.
Agricultural School, Ste. Anne de la Pocatiere, Que.....	Ayrshire.	Barnett, Robert, Curries.....	Holstein-Friesian.
Aikenhead, John, Hartney, Man.	Ayrshire.	Beck, S. R., South Cayuga	Holstein-Friesian.
Anderson, Robt., North Georgetown, Que.	Ayrshire.	Beemer, John, St. George	Holstein-Friesian.
Archibald, C. A., Truro, N.S.....	Ayrshire.	Bell, W. T., Willetsholme	Holstein-Friesian.
Armstrong, Jas., Shawville, Que.	Ayrshire.	Bonsall, H., Chemainus, B.C.....	Holstein-Friesian.
Aylwin, Chas. C., Freeman, Ayrshire.....	Ayrshire.	Brown, F. L., Beith, Que.	Holstein-Friesian.
Alexander, Jos., Miscouche	Ayrshire.	Buchanan, John, Elia	Holstein-Friesian.
Aras, Austin, St. Michael de Rougemont, Que.	Ayrshire.	Burr, Peter, Bloomfield	Holstein-Friesian.
Anderson, Thos., Lyn	Aberdeen-Angus.	Bailey, W. J., Nober	Holstein-Friesian.
Anderson, Geo. W., Mountain View	Holstein-Friesian.	Barber, Frank, Villa Nova	Holstein-Friesian.
Armstrong, Wm., Locust Hill.....	Holstein-Friesian.	Beale, T. R., Athens	Holstein-Friesian.
		Bedggood, Thos. E., Crumlin.....	Holstein-Friesian.
		Bell, Jas. R., Athelstan, Que.....	Holstein-Friesian.
		Rollert, H., Cassel	Holstein-Friesian.
		Brown, D. H., Beith, Que.	Holstein-Friesian.
		Brown, W. W., Lyn	Holstein-Friesian.
		Bryant, W. A., Cairngorm	Holstein-Friesian.
		Bullard, B., Plum Hollow	Holstein-Friesian.

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION.—*Continued.*

Name and Address.	Breed.	Name and Address.	Breed.
Burt, D., St. George	Holstein-Friesian.	Cavers, Jas. P., Ormstown, Que.	Ayrshire.
Bennett, W., Chatham	Hereford.	Callander, Jas., North Gower	Ayrshire.
Boyd, Mossom, Bobcaygeon	Hereford.	Central Experimental Farm, Ottawa	Ayrshire.
Boyd, Geo., Spring Valley	Holstein-Friesian.	Clark, J. G., Ottawa	Ayrshire.
Broughton, Geo. A., Harriston	Hereford.	Clark, Alex., Brinston's Corners	Ayrshire.
Ballantyne, W. W., Stratford	Ayrshire.	Cleland, Arch., Hemmingford, Que.	Ayrshire.
Baxter, David, North Georgetown, Que.	Ayrshire.	Cleugh, Wm., Campbellford	Ayrshire.
Bagg, Victor, Moose Creek	Ayrshire.	Cottingham, Jas., Ormstown, Que.	Ayrshire.
Bell & Sons, J. E., Farnham Centre, Que.	Ayrshire.	Crockett, T., Danville, Que.	Ayrshire.
Bell (M.D.), Jas., Dorchester, St., Montreal, Que.	Ayrshire.	Cumming, D., Russell	Ayrshire.
Black, Fred. S., Amherst, N.S.	Ayrshire.	Cumming, Donald, Lancaster	Ayrshire.
Blue, John, Capelon, Que.	Ayrshire.	Clark, Wm., Meyersburg	Ayrshire.
Biglow, Samuel, Canning, N. S.	Ayrshire.	Cain, Fred. L., Montreal, Que.	Ayrshire.
Brown, Alf., Hemmingford, Que.	Ayrshire.	Cloutier, Jos., Riviere aux Chiens, Que.	Ayrshire.
Bryson, James, Brysonville, Que.	Ayrshire.	Cumberland, Barlow, Port Hope	Ayrshire.
Bullock, W. J., Lakefield	Ayrshire.	Cole & Son, R., Wooler	Ayrshire.
Burnbank, A., Niagara-on-the-Lake	Ayrshire.	Dawson, Robt. P., Guelph	Shorthorn.
Bagg, Jas., St. Thomas	Ayrshire.	Dickieson, John, Eramosa	Shorthorn.
Bogart, J. W., Morewood	Ayrshire.	Dickieson, Richard, Guelph	Shorthorn.
Bonne-Enfant, Jos., St. Paul	Ayrshire.	Dods, David N., Penfold	Aberdeen-Angus.
l'Ermite, Que.	Ayrshire.	Dick, P. A., Ashgrove	Aberdeen-Angus.
Blackney, F. R., South Qu'Appelle, Assa.	Ayrshire.	Davis, Geo., Alton	Aberdeen-Angus.
Belanger, Maxime, St. Eustache, Que.	Ayrshire.	Deschamps, Louis, St. Paul l'Armitie, Que.	Ayrshire.
Brown, John, Howick Station, Que.	Ayrshire.	Dymont, N., Clappison	Ayrshire.
Cray, Alex., Everton	Shorthorn.	Davidson, J. G., Armitage	Aberdeen-Angus.
Cleghorn, John W., Mosboro	Shorthorn.	Dougherty, J. W., New Durham	Holstein-Friesian.
Cowan, Jas. & Son, Guelph	Shorthorn.	Duncan, W. A., Emery	Holstein-Friesian.
Copeland, Ezra., Rockwood	Shorthorn.	Dunn, Andrew, Ingersoll	Holstein-Friesian.
Currie, L. D., Hillsburg	Shorthorn.	Davidson, Thos., Spring Valley	Holstein-Friesian.
Currie, John, Eramosa	Shorthorn.	Deland, A. N., St. Jean, Que.	Holstein-Friesian.
Clark, R., City View	Ayrshire.	Dundon, John, St. Roch, Que.	Holstein-Friesian and Ayrshire.
Clame, F. E., Ontario & Moreau, Sts., Montreal, Que.	Holstein-Friesian.	Drew, L. G., Oshawa	Hereford.
Campbell, Robert, Roseneath	Holstein-Friesian.	Davidson, E. G., Ayer's Flats, Que.	Ayrshire.
Caldwell, J. H., Fallowhead	Holstein-Friesian.	Douglass, John H., Warkworth	Ayrshire.
Carlisle, G. T., Newtonbrook	Holstein-Friesian.	Deeks, J. H., Dunbar	Ayrshire.
Charlton, T. W., St. George	Holstein-Friesian.	Dunfield Bros., Dauphin, Man.	Ayrshire.
Clemons, G. W., St. George	Holstein-Friesian.	Denyes, H. K., Foxboro	Ayrshire.
Conner, Holland, Gananoque	Holstein-Friesian.	Descoteaux, J. F., St. Monique, Que.	Ayrshire.
Jct.	Holstein-Friesian.	Davies, Robt., Toronto	Ayrshire.
Craik, Robert, M. D., Montreal, Que.	Holstein-Friesian.	Dawes & Co., Lachine, Que.	Ayrshire.
Curtis, W. J., Willetsholme	Holstein-Friesian.	Denis, Arsene, St. Norbert, Que.	Ayrshire.
Cameron, J. W., Perth	Holstein-Friesian.	Dingwell, Jas., Williamstown	Ayrshire.
Campbell, Daniel, Vernon	Holstein-Friesian.	Drummond, A. McD., Petite Cote, Que.	Ayrshire.
Carlaw, T. B., Warkworth	Holstein-Friesian.	Drysdale, Thos., Allan's Corners, Que.	Ayrshire.
Caskey, J. A., Madoc	Holstein-Friesian.	Dechamps, Phillias, St. Paul l'Armitie, Que.	Ayrshire.
Caughell, G. H., Aylmer	Holstein-Friesian.	Drummond, Daniel, Ottawa	Ayrshire.
Clare, Herbert, Norwich	Holstein-Friesian.	Donaldson, James, Dewittville, Que.	Ayrshire.
Clarkson, John, Summerville	Holstein-Friesian.	Edwards, W. C., & Co., Rockland	Shorthorn, Hereford and Ayrshires.
Chambers, E. C., Fairfield Plains	Holstein-Friesian.	Elliott, John, Marden	Shorthorn.
Cohoe, J. W., New Durham	Holstein-Friesian.	Elliott, Wm. R., Guelph	Shorthorn.
Countryman, G. W., Tweed	Holstein-Friesian.	Eldridge, John, Hespworth Station	Aberdeen-Angus.
Curtis, Alfred, Willetsholme	Holstein-Friesian.	Ede, P. D., Oxford Centre	Holstein-Friesian.
Colbeck, Thos. M., Grand Valley	Hereford.	Elie, Jos., LaBaie, Que.	Holstein-Friesian.
Copland, F. M., Harriston	Hereford.	Edwards, John, Algonquin	Holstein-Friesian.
Campbell, John, Dalmeny	Ayrshire.	Ellis, Wm. G., Bedford Park	Holstein-Friesian.
Cotu, Edward, Ste. Elizabeth, Que.	Ayrshire.	Elliott, Wm. & Sons, Porter's Hill	Hereford.
Currie, John, Newmarket	Hereford.	Easton Bros., Charlottetown, P. E. I.	Ayrshire.
Champion, W. M., Reaburn, Man.	Ayrshire.	Empey, Adam, Springfield	Ayrshire.
Cumming, A. J., Heckston	Ayrshire.		
Campbell, John R. & Son, Vernon	Ayrshire.		
Carlyle Bros., Morewood	Ayrshire.		
Creighton, J. C., Hawley	Ayrshire.		
Clark, Jas., Campbellford	Ayrshire.		

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION.—*Continued.*

Name and Address.	Breed.	Name and Address.	Breed.
Fairbairn, H. K., Thedford.	Shorthorn.	Hubbs, Louis P., Hillier	Holstein-Friesian.
Fried's Sons, Roseville	Shorthorn.	Hanton, A. R., Frankville	Holstein-Friesian.
Foster, A. H., Twin Elm	Shorthorn.	Hartley, Henry, Norwich	Holstein-Friesian.
Fargey, Peter, Belleville	Holstein-Friesian.	Hartley, Thos., Donaview	Holstein-Friesian.
Ferland, Jos. B., Sorel, Que.	Holstein-Friesian.	Harwood, L. de L., Vaudreuil,	
Fletcher, Jos., Oxford Mills	Holstein-Friesian.	Que.	Holstein-Friesian.
Fry, C. C., Bright	Holstein-Friesian.	Herrick, J. E. K., Abbotsford,	
Farmer, F. F., Three Rivers,		Que.	Holstein-Friesian.
Que.	Holstein-Friesian.	Herron, J. H., Courtland	Holstein-Friesian.
Fierheller, E. E., Mt. Elgin.	Holstein-Friesian.	Hewitt, Isaac, Plattsville	Holstein-Friesian.
Foster, A. D., Halloway	Holstein-Friesian.	Higginson, Wm., Inkerman	Holstein-Friesian.
Foster, A. D., Bloomfield	Holstein-Friesian.	Hoover, A. J., Woodbridge	Holstein-Friesian.
Fleming, Henry, Craigleith	Hereford.	Hopps, John, Campbellford	Holstein-Friesian.
Found, John, Oshawa	Hereford.	Howe, F., Crampton	Holstein-Friesian.
Farlinger, W. K., Morrisburg	Ayrshire.	Hunter, Wm., Langley, B.C.	Holstein-Friesian.
Fisher, Hon. Sydney, Knowl-		Hammell, W. H., Beeton	Hereford.
ton, Que.	Ayrshire.	Henry, T. G., Mono Mills	Hereford.
Fox, M. C., Cobourg	Ayrshire.	Hillburn, W. & E., Kettleby	Hereford.
Fisher, Geo. E., Chatham,		Hinde & Son, Wm., Harriston	Hereford.
N. B.	Ayrshire.	Hodson, F. W., Ottawa	Hereford.
Fyles, F. F., Abercorn, Que.	Ayrshire.	Hunter, J. & J., Durham	Hereford.
Fulton, Geo., Fulton's Mills	Ayrshire.	Hunter, W. H., The Maples	Hereford.
Glenne, Wm., Eramosa	Shorthorn.	Harrison, Frank, Mount	
Govenlock, John A., Forest	Hereford.	Albert	Hereford.
Guy, S. W., Griersville	Hereford.	Hunter, A. S., Durham	Hereford.
Groff, Israel, Alma	Shorthorn.	Hamilton, John, Grand	Hereford.
George, E. D., Putnam	Holstein-Friesian.	Fernier, Que.	Ayrshire.
Gibson, T. M., Newcastle	Holstein-Friesian.	Hardy, Wellington, Roland,	
Griffin, F. J., Burgessville	Holstein-Friesian.	Man.	Ayrshire.
Gilroy, C. J., Glen Buell	Holstein-Friesian.	Hammill, H. C., Islay	Ayrshire.
Gilroy, G. A., Glen Buell	Holstein-Friesian.	Hardy, H., Bowesville	Ayrshire.
Green, J. A., Athens	Holstein-Friesian.	Hunter, Robt., Maxville	Ayrshire.
Grass, Geo. O., Sweetzburg, Que.	Holstein-Friesian.	Hardy, C., Bowesville	Ayrshire.
George, H. E., Crampton	Holstein-Friesian.	Hunter, Wm., Maxville	Ayrshire.
Gregg, F. H., Salford	Holstein-Friesian.	Hay, Wm., Howick, Que.	Ayrshire.
Gies, C. R., Heidelberg	Holstein-Friesian.	Hendy, Chas., Campbellford	Ayrshire.
Gilbert, H. J., Dereham		Geo., Delaware	Ayrshire.
Centre	Holstein-Friesian.	Howden, John, St. Louis de	
Glazier, D. N., Brockville	Holstein-Friesian.	Gonzague, Que.	Ayrshire.
Gooderham, D. J., Thornhill	Holstein-Friesian.	Hume & Co., A., Menie	Ayrshire.
Gallaughier, Hugh, Rosemont	Hereford.	Hunt, John, Russell	Ayrshire.
Goodchilds, A., Craigleith	Hereford.	Hunter, Mrs. H. H., Renton,	
Gillies, Wm. M., Robb	Hereford.	Man.	Ayrshire.
Gilmour, John J., Campbell-		Hudson & Sons, John, Morton	Ayrshire.
croft	Aberdeen-Angus.	Hudson, Joseph, Lyn	Ayrshire.
Gaw, Jas., Sheffordvale, Que.	Ayrshire.	Harkness & Sons, Irena	Ayrshire.
Gilroy, Joshua, Lyn	Ayrshire.	Hudson, Arch., Soperton	Ayrshire.
Gordon, Hector, Howick, Que.	Ayrshire.	Innes, P., Coldbrook Station,	
Gibbons, W. T., Northcote	Ayrshire.	N. S.	Ayrshire.
Goodliffe, S. J., Sussex, N.B.	Ayrshire.	Irving, A., Scotstown, Que.	Ayrshire.
Greenshields, J. N., Danville,		Irving, Thos., North George-	
Que.	Ayrshire.	town, Que.	Ayrshire.
Greenway, Hon. Thos., Cryst-		Immerman, C. J., Lyn	Ayrshire.
tal City, Man.	Ayrshire.	Jeffrey, Alex., Whitby	Shorthorn.
Greig, Wm., Allan's Corners,		Jeffs & Son, E., Bond Head	Shorthorn.
Que.	Ayrshire.	Johnston, Arthur, Greenwood	Shorthorn.
Gouin, P. A., Three Rivers,		Jakes, J. C., Merrickville	Holstein-Friesian.
Que.	Ayrshire.	Jantzi, J., Baden	Holstein-Friesian.
Harding, E. H., Thorndale	Shorthorn.	Johnson, Wm., Delta	Holstein-Friesian.
Hauser, Ignatius, Weisenburg	Shorthorn.	Johnson, J. W., Sylvan	Holstein-Friesian.
Hood, G. B., Guelph	Grade.	Johnston, Henry, Frankville	Holstein-Friesian.
Howard, J. L., Sutton West	Shorthorn.	Johnston, Wesley, Chester-	
Hulet, Alf. E., Norwich	Holstein-Friesian.	ville	Holstein-Friesian.
Hall, W., Washington	Aberdeen-Angus.	Jones, D., Jr., Caledonia	Holstein-Friesian.
Hodgson, John, Mindemoya	Aberdeen-Angus.	Jackson, J. S., Ramosa	Hereford.
Harris, W. O., Gore's Landing	Aberdeen-Angus.	Jenkins, Jos., Pearceley	Hereford.
Hallman, A. C., Breslau	Holstein-Friesian.	Jackson, W. R., 1318 Niagara	
Haley, M. H., Springfield	Holstein-Friesian.	St., Buffalo, N.Y.	Ayrshire.
Harding, Jas., Graham's Rd.,		James, J. A., Nilestown	Ayrshire.
P. E. I.	Holstein-Friesian.	Jefferies, W. A., Sussex, N.B.	Ayrshire.
Haley, M. L., Springfield	Holstein-Friesian.	Kelly, Arthur, Kelvin	Holstein-Friesian.
Harrison, Jas. E., Kincardine	Holstein-Friesian.	Kincaid, C. A., Barriefield	Holstein-Friesian.
Harrison, Geo., Kincardine	Holstein-Friesian.	Kennedy, A., Ayr	Holstein-Friesian.
Hartley, Miles, Norwich	Holstein-Friesian.	Kitchen, S. G., St. George	Holstein-Friesian.
Hartney, W. A., New Durham	Holstein-Friesian.	Kirkland, J. (Estate), West-	
Hawse, W. H., Athens	Holstein-Friesian.	ham Island, B.C.	Hereford.
Heggerman, B. E., Minto	Holstein-Friesian.	Korry, Geo., Manion	Hereford.
Herriott, Jas., Souris, Man.	Holstein-Friesian.	Kains, A., Byron	Ayrshire.
Hicks, R. F., Newtonbrook	Holstein-Friesian.	Kay, W. F., Phillipsburg, Que.	Ayrshire.
Hclgate, John A., Foxboro	Holstein-Friesian.	Kennedy & Sons, A., Vernon	Ayrshire.
Honey, R., Brickley	Holstein-Friesian.	Kinsey, Jos., Doon	Ayrshire.
Hopps, Benj., Campbellford	Holstein-Friesian.	Knight, Joshua, Elginburg	Ayrshire.
Hoskin, Thos., The Gully	Holstein-Friesian.	Lawrence, J., Oxford Centre	Jersey.
		Leslie & Pearn, Acton	Shorthorn.

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION.—Continued.

Name and Address.	Breed.	Name and Address.	Breed.
Leask, Jas., Greenbank.....	Shorthorn.	Marsh & Son, Wm., Gladstone	Ayrshire.
Lindsay, Jas., Fergus.....	Shorthorn.	Mallory, B., Belleville.....	Holstein-Friesian.
Lyons, S. J., Norval.....	Jersey.	Mallory, J. M., Bloomfield.....	Holstein-Friesian.
Lyons, T. & Son, Alma.....	Shorthorn.	Manhard, G. H., Manhard.....	Holstein-Friesian.
Lowe, John, Elora.....	Aberdeen-Angus.	Merrills, D. E. A., Warkworth	Holstein-Friesian.
Laidlaw, E. W. H., Aylmer.....	Holstein-Friesian.	MacIntyre, G., Renfrew.....	Holstein-Friesian.
Lea, Walter M., Victoria.....		McFarlane, John, Eden Mills	Shorthorn.
P. E. I.....	Holstein-Friesian.	McCallum, Jas., Amulree.....	Grade.
Leeson, F., Aylmer.....	Holstein-Friesian.	McCrae, D., Guelph.....	Galloway.
Logan, H. Lorne, Amherst		McQueen, Jos., Elora.....	Shorthorn.
Point, N.S.....		McGillivray, J. A., Bedford	
Loucks, John E., Frankville.....	Holstein-Friesian.	Park.....	Shorthorn.
Laing, Thos., Eburne, B.C.....	Holstein-Friesian.	McDougall, H., Guelph.....	Hereford and Aberdeen-Angus.
Laying, H. A., Spring Valley.....	Holstein-Friesian.	McCorkindale, John, Guelph	Shorthorn.
Lee, J. W., Simcoe.....	Holstein-Friesian.	McKinnon, A., Hillsburg.....	Aberdeen-Angus.
Logan, Stanley A., Amherst		McLoud, Jas. A., Plainville.....	Aberdeen-Angus.
Pt., N.S.....	Holstein-Friesian.	McKinnon, R. W., Hillsburg.....	Aberdeen-Angus.
Leish, Wm. B., Watford.....	Hereford.	McKinney, Alex., Erin.....	Aberdeen-Angus.
Lee, R. S., Williamsford.....	Hereford.	McCrae, J. L., Brockville.....	Holstein-Friesian.
Little, Jas. D., Teeswater.....	Hereford.	McDonald, Allan, Ormond.....	Holstein-Friesian.
Loving, J. A., Loving.....	Hereford.	McDonald, Peter A., Ormond	Holstein-Friesian.
Leeson, C. L., Varney.....	Hereford.	McKillican, W. E., Vankleek	
Lecke, John, Campbellford.....	Ayrshire.	Hill.....	Holstein-Friesian.
LeMaistre, J. Couston, Peri-		McLean, Gordon, Athens.....	Holstein-Friesian.
bonica, Lac St. Jean, Que.		McMillan, D. J., Laggan.....	Holstein-Friesian.
Lachapelle, Nap., St Paul		McMaster, D. E., Laggan.....	Holstein-Friesian.
L'Ermite, Que.....	Ayrshire.	McCaig, M., Vankleek Hill.....	Holstein-Friesian.
Langlier, Gus. A., Cap Rouge,		McCormack, J. W., Morewood	Holstein-Friesian.
Que.....	Ayrshire.	McDonald, John, Darford.....	Holstein-Friesian.
Legris, U., St. Leon, Maski-		McDowell, M., Norwich.....	Holstein-Friesian.
nonge, Que.....	Ayrshire.	McGregor, John, Constance.....	Holstein-Friesian.
Leitch, David, Cornwall.....	Ayrshire.	McGhee, Robert, Beachville.....	Holstein-Friesian.
Lamy, Adolphe, St. Leon, Que.		McLean, J. H., Inkerman.....	Holstein-Friesian.
Ayrshire.		McGhee, S. J., Beachville.....	Holstein-Friesian.
Logan, J. W., Allan's Cor-		McNeil, C. A., Gananogue.....	Holstein-Friesian.
ners, Que.....	Ayrshire.	McDermid, J. A. & P., Stayner	Hereford.
Labissoniere, Louis, Peribon-		McDairmid, P. T., Duntroon	Hereford.
ica, Lac St. Jean, Que.....	Ayrshire.	McLean, W. J., Elmgrove.....	Hereford.
Lussier, Alp. St. Charles,		McConkey, R. J., Stroud.....	Hereford.
Richelieu, Que.....	Ayrshire.	McCracken, Jas., Staples.....	Hereford.
Mackie, Geo., West Montrose.....		MacKerracher, D. G., How-	
Meyer, A. E., Guelph.....	Shorthorn.	ick, Que.....	Ayrshire.
Martin, R. B., Elmira.....	Holstein-Friesian.	McCormack, D. A., Allan's	
Morgan, J. & Sons, Kerwood.....	Shorthorn.	Corners, Que.....	Ayrshire.
Marien, Dr. A., 447 Sher-		McCormack, Jas., Rockton.....	Ayrshire.
brooke St., Montreal, Que.		McArthur, P. D., Howick	
Mittlefehldt, A., Elcho.....	Holstein-Friesian.	Station, Que.....	Ayrshire.
Mathiew, Ferrier, Lachenaie,		McLachlan Bros., Arnprior.....	Ayrshire.
Que.....	Ayrshire.	McMillan, D. P., Alexandria.....	Ayrshire.
Montmorency, Geo. de, Wood-		McVetty, M. H., Ottawa.....	Ayrshire.
stock.....	Holstein-Friesian.	McGinnes, T. C., Itherville,	
Macklin, C. W., Centerton.....	Holstein-Friesian.	Que.....	Ayrshire.
Macklin, S., Streetsville.....	Holstein-Friesian.	McCallum, T. D., Danville,	
Mott, Weldon, D., Lyn.....	Holstein-Friesian.	Que.....	Ayrshire.
Mitchener, E., Red Deer, Alta.		McCartney, Thos., Longburn,	
Ayrshire.		Man.....	Ayrshire.
Munro, D., Winnipeg, Man.....	Holstein-Friesian.	McDonald, John, Shubena-	
Mosseau, J. Bte., Berthier,		cadie, N.S.....	Ayrshire.
Que.....	Ayrshire.	McDowell, W. H., Compton,	
Monte, J. M., Stanstead, Que.		Que.....	Ayrshire.
Holstein-Friesian.		McIntyre Bros., Sussex, N.B.	
Morden, A. A., Wellington.....	Ayrshire.	Ayrshire.	
Moorhead, Jas. G., Ventnor.....	Holstein-Friesian.	McFarlane, Robt., Riverfield,	
Murry, Benj., Martintown.....	Ayrshire.	Que.....	Ayrshire.
Moxley, Jas. H., Tilley.....	Holstein-Friesian.	McFarlane, D. A., Kelso, Que.	
Mackie Bros., Eburne, B.C.....	Ayrshire.	Ayrshire.	
Marsh & Son, E., Gladstone.....	Ayrshire.	McDonald, John, New Glas-	
Mackie, R. J., Oshawa.....	Hereford.	gow, N.S.....	Ayrshire.
Morrin, Thomas, Lachute,		McKee, H. & J., Norwich.....	Ayrshire.
Que.....	Ayrshire.	McDonald, Sir Wm., St. Anne	
Mallory, F. R., Frankford.....	Holstein-Friesian.	de Bellevue, Que.....	Ayrshire.
Martindale, W. N., Stanbridge		McLeod, W. D., Kirkhill.....	Ayrshire.
East, Que.....	Ayrshire.	McIntosh, Peter, Cass Bridge	
Millar, Wm., Marshfield,		Ayrshire.	
P. E. I.....	Ayrshire.	McMaster, J. A., Montreal,	
Mitchell, W., Curry Hill.....	Ayrshire.	Que.....	Ayrshire.
Mackie, Wm., Agassiz, B.C.....	Ayrshire.	McQuat, Jas., Brownsburg,	
Massey, W. H. (Estate), Cole-		Que.....	Ayrshire.
man.....	Ayrshire.	Nixon, F. A., Price's Corners	
Mellick, Aaron, Smithville.....	Ayrshire.	Aberdeen-Angus.	
Morrison, John R., Burnbrae		Newlands, Wm. Eburne, B.C.	
Ayrshire.		Holstein-Friesian.	
Montgomery, G. H., Phillips-		Nunnick, W., Brantford.....	Holstein-Friesian.
burg, Que.....	Ayrshire.	North, Geo., Marden.....	Holstein-Friesian.
Muir, G. H., Bogie, Que.....	Ayrshire.	Ness, Robt., Howick, Que.....	Ayrshire.
Muir, Sr., A., Huntingdon,		Ness, R. R., Howick, Que.....	Ayrshire.
Que.....	Ayrshire.	Neely, Robt., Dorchester Sta-	
Mills, T. J., Maria, Que.....	Ayrshire.	tion, Que.....	Ayrshire.

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION.—Continued.

Name and Address.	Breed.	Name and Address.	Breed.
Ness, D. T., Howick, Que.	Ayrshire.	Robinson, A. E., Markham	Holstein-Friesian.
Nation, I., Souris, Man.	Ayrshire.	Rutherford, J. C., Kemptville	Holstein-Friesian.
Ogilvie, W. Watson, Lachine		Reesor, F. E. N., Locust Hill	Holstein-Friesian.
Rapids, Que.	Ayrshire.	Rettie, Jas., Norwich	Holstein-Friesian.
Owens, Hon. Wm., 4026 Dor-		Rice, Geo., Tillsonburg	Holstein-Friesian.
chester St., Montreal, Que.	Ayrshire.	Richardson, J. W., Caledonia	Holstein-Friesian.
Quimet, Clovis, St. Francois		Rife, David, Hespeler	Holstein-Friesian.
de Sales, Que.	Ayrshire.	Rivers, Walburn, Foldens	Holstein-Friesian.
Owens, E. W., Antrim	Ayrshire.	Row, Fred., Curries	Holstein-Friesian.
Ontario Agricultural College.	Ayrshire and	Rosebrugh, Jas., St. George	Holstein-Friesian.
Guelph	Holstein-Friesian.	Rooke, Geo., Dereham Centre	Holstein-Friesian.
Quimet, Adolphe, St. Fran-		Reaman, I., Concord	Hereford.
cois, des Sales, Que.	Ayrshire.	Reed, H., Mimosa	Hereford.
Quimet, E., St. Rose, Que.	Ayrshire.	Reid, H. & J., Epping	Hereford.
O'Brien, John, London West	Aberdeen-Angus.	Reid, Thos. H., Holstein	Hereford.
O'Mahony, D., Renton	Holstein-Friesian.	Rendell & Sons, J., Highgate	Hereford.
O'Neill Bros., Southgate	Hereford.	Reid & Co., Hintonburg	Ayrshire.
Oldham, W. J., Mt. Albert	Hereford.	Robertson, R., North George-	
Parkinson, G. & W., Eramosa	Shorthorn.	town, Que.	Ayrshire.
Pickard, J. O., Galt	Grade.	Rannie, C., Menie	Ayrshire.
Pritchard Bros., Fergus		Roach, J. F., Sussex, N.B.	Ayrshire.
Pocket, Robt., c/o Mr. Mc-		Rathburn Co., Deseronto	Ayrshire.
Gerin, Coaticook, Que.		Robertson, R., Nappan, N.S.	Ayrshire.
Pettit, W. G. & Sons, Freeman	Shorthorn.	Robertson, A., Como, Que.	Ayrshire.
Palmer, B. J., New Durham	Holstein-Friesian.	Robinson, Tyson, Como, Que.	Ayrshire.
Pannabecker, E., Hespeler	Holstein-Friesian.	Roach, Mrs. Sarah, Sussex,	
Patten, J. H., Paris	Holstein-Friesian.	N. B.	Ayrshire.
Patterson, M., Almonte	Holstein-Friesian.	Stewart, P., Everton	Grade.
Paquette, Ferdinand, 335 St.		Steen, N. A., & Son, Meadow-	
Dennis, Montreal, Que.	Holstein-Friesian.	vale	Shorthorn.
Parker, A. H., Frankville	Holstein-Friesian.	Smith, A. W., Maple Lodge	Shorthorn.
Patterson, Wm., Wawanesa		Sibbald, E. K., Sutton West	Shorthorn.
Man.	Holstein-Friesian.	Simpson, Jas., Moffat	Shorthorn.
Pettes, F. N., L'Artifice, Que.	Holstein-Friesian.	Schmidt, Andrew D., Elmira	Shorthorn.
Pettit, F. C., Burgessville	Holstein-Friesian.	Scott, D. B., Fergus	Hereford.
Pickering, John, Frelighs-		Scott, T., & Son, Sutton West	Shorthorn.
burg, Que.	Holstein-Friesian.	Sutton, J. W., Ospringe	Shorthorn.
Post, H. H., Wellington	Holstein-Friesian.	Sparrow & Son, R. C., An-	
Potter, A. B., Montgomery,		trim	Shorthorn.
Assa.	Holstein-Friesian.	Spratt, T. A., Billing's Bridge	Holstein-Friesian.
Pound, W. F., Bayham	Holstein-Friesian.	Shortreed, Black & Arm-	
Pettes, Jas. C., West Brome,		strong, Fergus	Aberdeen-Angus.
Que.	Holstein-Friesian.	Sharp, Jas., Rockside	Aberdeen-Angus.
Pettit, F. E., Burgessville	Holstein-Friesian.	Stewart, Wm., Lucasville	Aberdeen-Angus.
Poole, Samuel, Norwich	Holstein-Friesian.	Sangster, N., Ormstown, Que.	Holstein-Friesian.
Prouse, Geo. T., Ostrander	Holstein-Friesian.	Scott, Robt., Epsom	Holstein-Friesian.
Penhall, E. J., Nober	Hereford.	Simmons, W. H., New Dur-	
Popplewood, Rich., Elliott	Hereford.	ham	Holstein-Friesian.
Paul Bros., Chrysler	Ayrshire.	Slater, Bruce, Inkerman	Holstein-Friesian.
Pope, J. C., Regina, Assa.	Ayrshire.	Smith, Wm. C., New Durham	Holstein-Friesian.
Patenaude, P., St. Remi,		Stauffer, F., Washington	Holstein-Friesian.
Que.	Ayrshire.	Steves, H. M., Steveston, B.C.	Holstein-Friesian.
Parlee, M. H., Sussex, N.B.	Ayrshire.	Stewart, Hugh, Ormond	Holstein-Friesian.
Parker, W. D., Hatley, Que.	Ayrshire.	Sturgis, D. E., Tillsonburg	Holstein-Friesian.
Paton, Hugh, Montreal, Que.	Ayrshire.	Suhring, Wm., Sebringville	Holstein-Friesian.
Phaneuf, Antonie, St. An-		Sangster, Jas., Tatehurst,	
toine, Vercheres, Que.	Ayrshire.	Que.	Holstein-Friesian.
Provincial Stock Farm, Char-		Shaw, W. A., Foxboro	Holstein-Friesian.
lottetown, P. E. I.	Ayrshire.	Scatherd, Edwin, Wyton	Holstein-Friesian.
Purcell, Daniel, Huntingdon,		Shunk, Wm., Sherwood	Holstein-Friesian.
Que.	Ayrshire.	Schell, Walter S., Woodstock	Holstein-Friesian.
Parsons, J. F., Barnston, Que.	Ayrshire.	Smith, Geo. W., Dundas	Holstein-Friesian.
Proulx, Leopold, St. Ours,		Smith, S. E., Dundas	Holstein-Friesian.
Que.	Ayrshire.	Smith, C. E., Scotland	Holstein-Friesian.
Prevost, Felix, Varennes, Que.	Ayrshire.	Sonley, T. H., Manilla	Holstein-Friesian.
Peters, J. M., West Brome,		Stevenson, R. S., Ancaster	Holstein-Friesian.
Que.	Ayrshire.	Stevens, Wm. C., Phillips-	
Ritchie, David, Eramosa	Shorthorn.	ville	Holstein-Friesian.
Robertson, Archie, Eden Mills	Shorthorn.	Stewart, Frederick, Elfrida	Holstein-Friesian.
Rudd, C. O., Eden Mills	Devon.	Stewart, John, Delta	Holstein-Friesian.
Rennie & Sons, J., Blackwater	Shorthorn.	Stewart, J. W., Lyn	Holstein-Friesian.
Robertson, N. S., Arnprior	Shorthorn.	Summerfeldt, L., Unionville	Holstein-Friesian.
Robinson, T., Dunsford	Aberdeen-Angus.	Sweet, Ogden, North Sutton,	
Russell, A. J., Cobourg	Aberdeen-Angus.	Que.	Holstein-Friesian.
Ritchie, Geo. A., Plainville	Aberdeen-Angus.	Shannon Bros., Arnprior	Hereford.
Reinke, Fred., Southcoate	Holstein-Friesian.	Skippon, Thos., Hyde Park	Hereford.
Rice, Alfred, Woodstock	Holstein-Friesian.	Stone, Alf., Guelph	Hereford.
Richardson, J. A., South		Stone Stock Co., F. W.,	
March	Holstein-Friesian.	Guelph	Hereford.
Richardson, Matt., Caledonia	Holstein-Friesian.	Stutt, Wm., Forest	Hereford.
Ripley, H., Elgin	Holstein-Friesian.	Stutt, R. W., Forest	Hereford.
Robertson, J. W., Vankleek		Squire, Wm., Amherstburg	Hereford.
Hill	Holstein-Friesian.	Sutherland, A., Bond Head	Hereford.
		Smith A., Hawkstone	Hereford.

MEMBERS OF DOMINION CATTLE BREEDERS' ASSOCIATION.—*Concluded.*

Name and Address.	Breed.	Name and Address.	Breed.
See, R. S., Williamsford	Hereford.	Varcoe, John, Carlow	Aberdeen-Angus.
Sandilands, John, Williams- ford	Ayrshire.	Van Patter, J. M., Luton	Holstein-Friesian.
Simpson, Jas., South Augusta	Ayrshire.	Varey, E. B., Woodstock	Holstein-Friesian.
Sims, John, Melbourne	Bridge,	Walsh, John, Mosboro	Shorthorn.
Que.	Ayrshire.	Walters, Wm. G., Thorndale	Holstein-Friesian.
Smith, Wm., Scotland	Ayrshire.	Watson, Jas., Sonya	Shorthorn.
Stokes, John, Tweed	Ayrshire.	Wallace, Jas. S., Glenmorris	Grade.
Steady, R. G., Lyn	Ayrshire.	Weber, Menno S., Waterloo	Shorthorn.
Steel Bros., Glenboro, Man.	Ayrshire.	Wilson, J. & Son, Fergus	Grade.
Stephen, W. F., Huntingdon,	Que.	White, E. E., Balderson	Shorthorn.
Ayrshire.		Whitelaw, A. & W., Guelph	Shorthorn.
Stewart & Co., Wm., Menie	Ayrshire.	Wright, Dan., Ponsonby	Shorthorn.
Stewart, Jas. A., Menie	Ayrshire.	Wolfe, M., Hespeler	Grade.
Senecall, C., St. Maie, Que.	Ayrshire.	Wilson, W., Plainville	Aberdeen-Angus.
Shirreff, Wm., & G. G., Claren- ce	Ayrshire.	Wagler, C., Baden	Holstein-Friesian.
Smith, Mrs. A. W., & John		Walker, A. T., Beaconsfield	Holstein-Friesian.
Wilson, Simcoe	Ayrshire.	Walker, R. W., Utica	Holstein-Friesian.
Sanbourn & Son, J. E., South		Webster, D. M., Athens	Holstein-Friesian.
Roxton, Que.	Ayrshire.	Welsh, Henry, Weston	Holstein-Friesian.
Safford, W. R., Danville, Que.	Ayrshire.	Willis, R., Jr., Glen Meyer	Holstein-Friesian.
Seminary de Quebec, Quebec	Ayrshire.	Wiltse, Ford B., Athens	Holstein-Friesian.
Standish, Jas., Warden, Que.	Ayrshire.	Woodworth, M. E., Lacolle,	Que.
Smith, R. W., Clanbrassil	Ayrshire.	Que.	Holstein-Friesian.
Snetsinger, J. Wilson, New- ington	Ayrshire.	Wylie, Jas. H., Almonte	Holstein-Friesian.
Schofield, E. A., St. John,	N. B.	Williams, Chas., Ostrander	Holstein-Friesian.
Ayrshire.		Wilson, Howard, Russell	Holstein-Friesian.
Schofield, David, Blackville,	N. B.	Wyckoff, I. G., Tyrell	Holstein-Friesian.
Ayrshire.		Weller, A. E., Kingston Jct.	Holstein-Friesian.
Talbot, D. & Son, Everton	Shorthorn.	Warnica, A. H., Painswick	Hereford.
Taylor, J. M., Guelph		Wigle, A., Kingsville	Hereford.
Thompson, E. & W. J., Spiers	Shorthorn.	Wright, Herbert, Guelph	Hereford.
Tolton, Jas. & Geo., Walker- ton	Shorthorn.	Wilcox, Frank, Bond Head	Hereford.
Thomson, P. A., Hillsburg	Aberdeen-Angus.	Watt, John, Allan's Corners,	Que.
Thomson, A. J., Hillsburg	Aberdeen-Angus.	Que.	Ayrshire.
Tackell, Wm., Zenda	Holstein-Friesian.	Wells & Son, A. C., Chilli- wack, B.C.	Ayrshire.
Tannahill, John, White's Sta- tion, Que.	Holstein-Friesian.	Wood, And., Vankleek Hill	Ayrshire.
Truesdell, Jas. D., Spring Valley	Holstein-Friesian.	Wood, Walter J., Short Hills,	N. W. T.
Telfer, T. G., Ingersoll	Holstein-Friesian.	Whittaker, H. J. & Sons,	Ayrshire.
Taylor, F. W., Wellman's		North Williamsburg	Ayrshire.
Thorn, Wm., Lynedoch	Ayrshire.	Willoughby, Mrs. H. G., Sas- katoon, Sask.	Ayrshire.
Thompson, S. J., & Sons, St.		Wilson, J. Lockie, Alexan- dria	Ayrshire.
James, Man.	Ayrshire.	Woodsee Bros., Rothesay	Ayrshire.
Tipping, J. A., Clarenceville,	Que.	Walker, jr., Thos., Wellman's Corners	Ayrshire.
Ayrshire.		Wooley, E. H., Box 303, Sim- coe	Ayrshire.
Trappiste Fathers, LaTrappe,	Oka, Que.	Watson, Thos., Howick, Que.	Ayrshire.
Ayrshire.		White, Wm., Bloomfield	Ayrshire.
Treverton, Thos. C., Belleville	Ayrshire.	Young, S., Guelph	Aberdeen-Angus and Shorthorn.
Thibedeau, D., North Nation Mills, Que.	Ayrshire.	Young, A., Glanford	Shorthorn.
Trudel, T., St. Prosper, Que.	Ayrshire.	Yates, Mahlon, Athens	Ayrshire.
Turenne, Delphis, St. Paul		Young, R., Bowesville	Ayrshire.
L'Ermite, Que.	Ayrshire.	Zoeller, A. M., New Hamburg	Holstein-Friesian.
Underwood, John, Grafton	Aberdeen-Angus.		

Dominion Sheep Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Sheep Breeders' Association was held in the Palmer House, Toronto, on February the 9th, 1906.

There was a large and representative gathering of sheep breeders present, and much interest was taken in the discussions. The President, J. M. Gardhouse, occupied the chair.

As the minutes of the last meeting had been published and distributed to members, they were on motion taken as read.

PRESIDENT'S ADDRESS.

It is gratifying to note the keen interest sheep breeders are taking in the welfare of their business as is evidenced by the large number of breeders in attendance at this meeting. We are met together after one of the most successful years in the history of sheep breeding. Trade prospects at the present time are very bright, and I expect the year 1906 will be one of continued prosperity. The price of wool is on the increase, and the demand for mutton has grown wonderfully of late years. I must also refer to honors brought to us by those of our breeders who exhibited at the late International Exhibition in Chicago. Our friends across the line are among our best customers for breeding sheep, and the high standing our sheep took while in competition with theirs will do much towards promoting trade.

REPORT OF THE EXECUTIVE.

The following report of the Executive was read by the secretary and afterwards discussed clause by clause:

SHEEP RECORDS.—At the last annual meeting of the Association the following resolution was passed:

“That the Dominion Sheep Breeders' Association approve the plan of nationalizing the various records and at once proceed to nationalize their Association and records; that the office be transferred from Toronto to Ottawa; that A. W. Smith, J. T. Gibson, Lieut.-Col. R. McEwen, Lieut.-Col. D. McCrae, Lieut.-Col. J. A. McGillivray, Robert Miller and Hon. John Dryden be a committee to meet the Live Stock Commissioner and at once complete arrangements.”

A meeting of the Committee was held at Ottawa on September 13th, 1905, and the following resolutions were passed:

It was moved by J. A. MCGILLIVRAY, seconded by A. W. SMITH, “That the rules of the following Associations should be adopted as the standard for the different breeds of sheep in the records of the Dominion Sheep Breeders' Association:—

The Continental Dorset Club.

The American Shropshire Record Association.
 The American Southdown Record Association.
 The American Leicester Breeders' Association.
 The American Cotswold Sheep Breeders' Association.
 The Hampshire Down Breeders' Association of America.
 The American Lincoln Association.

-Carried."

It was moved and seconded that the following gentlemen be representatives from this committee to meet representatives from the above named Associations:—

Shropshire Association—Robt Miller, Hon. John Dryden.

Leicester Association—A. W. Smith, J. M. Gardhouse.

Cotswold Association—Lt.-Col. D. McCrae.

Southdown Association—Lt.-Col. R. McEwen.

Hampshire Association—Geo. Telfer.

Lincoln Association—John Gibson.

Oxford Association—Henry Arkell.

Dorset Association—Lt.-Col. John A. McGillivray.

It was moved by Hon. JOHN DRYDEN, seconded by A. W. SMITH,—“That this committee authorizes each delegation to make an agreement to accept Canadian registered pedigrees of sheep owned by all members of the respective Associations at 25 cents each.”—Carried.

It was moved by JOHN DRYDEN, seconded by A. W. SMITH,—“That all pedigrees be printed in full for the first time; afterwards reference shall be made to pedigrees already printed. Certificates shall contain full pedigrees in every case. The names of breeders of imported dams shall be given when possible.”—Carried.

Moved by R. McEWEN, seconded by D. McCRAE,—“That registration fees for members shall be 50 cents, and for non-members double fees; penalty fees in accordance with regulations of American Associations to be adopted.”—Carried.

Moved by J. A. MCGILLIVRAY, seconded by R. McEWEN,—“That the Record Committee be requested to appoint a Registrar for the Sheep Record.”—Carried.

The matter was then taken up by correspondence with those interested in the American Records to make arrangements for having it considered at the meetings of the American Associations held in Chicago. The representatives appointed attended those meetings and the following report was made to the Minister of Agriculture regarding them.

AMERICAN SHEEP RECORD ASSOCIATIONS.—The Committee appointed to go to Chicago met the following American Sheep Record Associations and discussed with them the possibility of establishing International Associations for Sheep: December 19th, American Cotswold Association; American Oxford Down Association; American Lincoln Association. December 20th, Continental Dorset Club; American Southdown Breeders' Association. December 21st, American Shropshire Association. The following clauses were debated with each of these Associations, including the American Leicester Breeders' Association, which met in Guelph during the time of the Winter Fair.

Canadians registering in U. S. Records must be members of the American Associations where the record is made.

All pedigrees transferred from the Canadian Office to an American record shall be fully prepared for the printer before transmission.

For each pedigree transferred from the Canadian office for publication in the American Record there shall be paid to American registry office 30 cents per pedigree.

Should export certificates be required, an additional fee of ten cents per pedigree may be charged.

Registration numbers for Canadian transfer to be allotted by American Secretary (a block at one time); when these are used, an additional block of numbers to be furnished to complete the volume.

A representative approved by the American Secretaries to be placed in the Canadian office, who will be authorized by power of attorney to sign the certificates for publication, such officers to be paid by the Canadian authorities.

All the Associations interviewed accepted in a general way the foregoing clauses, and each Association, except the Leicester and Lincoln Associations, appointed a committee to meet a committee to be named by the Dominion Minister of Agriculture, and go more fully into the details of the scheme of establishing international records for sheep. The committees appointed by the American Associations were given in each case full power to act for their respective Associations. These committees will convene at such time and place as the Honorable Minister of Agriculture may suggest.

QUEBEC RECORDS.—(See clause under this heading in the Report of the Dominion Swine Breeders' Association, page 29.)

WINTER FAIR, GUELPH, AND EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, OTTAWA.—(See clauses under these headings in the Report of the Dominion Cattle Breeders' Association, page 8.)

AUCTION SALES.—A meeting of the Executive was held to consider the advisability of holding a public sale of sheep. The proposition was to hold a sale at Guelph in the fall of 1905, with the different breeds represented in accordance with the following list, making a total of 100 ewes and 50 rams, the age of the ewes to be between one and four years, and in the case of rams, entries were to be under two years old. The cost of selling was to be about \$1.25 per head.

	Ewes.	Rams.
Leicesters	20	10
Lincolns	10	5
Cotswolds	14	7
Shropshires	20	10
Southdowns	10	5
Dorsets	8	4
Oxfords	10	5
Suffolks and Hampshires	8	4
Total	100	50

After the matter was thoroughly discussed it was decided that as no special expression of opinion has been made by members of the Association it would be wise to postpone the matter, until the question could be fully considered at the next annual meeting.

FINANCIAL STATEMENT

For year ending December 31, 1905.

<i>Receipts.</i>		<i>Expenditure.</i>	
Cash on hand from previous year as per last report	\$51 13	Expenses for annual meeting...	\$ 6 00
Members' fees	78 00	Directors' expenses	8 60
		Postage and stationery	16 55
		Printing	15 28
		Office expenses	4 30
		Telegraph, telephone & express.	6 24
		Auditor	5 00
			\$61 97
		Cash on hand	67 16
	\$129 13		\$129 13

Examined and found correct, this 30th day of January, 1906.

(Signed) J. M. DUFF, Auditor.

Respectfully submitted.

(Signed) J. M. GARDHOUSE, President.

A. P. WESTERVELT, Secretary.

The establishment of sheep records was fully explained by Hon. John Dryden and was discussed by members. Confidence was expressed in the plan and on motion of Lt.-Col. McCRAE, seconded by Lt.-Col. MCGILLIVRAY, it was resolved that the report of meetings held with American Sheep Record Associations be passed.

The clause referring to Quebec Records was accepted and passed.

In discussing the clause regarding auction sales of sheep, the members expressed their confidence in the success of such sales. The members decided to amend the clause by striking out the parts referring to the ages of animals to be offered and to the cost of selling. In arranging for a sale the details were left to the Executive.

It was moved by Lt.-Col. McCRAE, seconded by JOHN CAMPBELL, "That the whole of the report be now accepted," Carried.

Mr. J. LLOYD-JONES wished to have the members consider the advisability of asking the Dominion Government to increase the duty on all classes of wool that are produced in Canada and also on live sheep and lambs. The following committee was appointed to look into these matters, confer with the Dominion Government, and report at the next meeting:—Hon. John Dryden, Lt.-Col. D. McCrae, C. W. Peterson, Calgary; H. L. Hewson, Amherst, N.S. and J. G. Hanmer.

The following recommendations to Record Associations were unanimously passed by the National Record Board and referred to the members of the Sheep Breeders' Association for their consideration:

(1) In order that the Board of Directors of any Record Association may fairly represent the different Provinces of the Dominion, it is recommended that the various Record Associations adopt regulations as follows:.

The members of any affiliated Record Association residing within the bounds of any Province shall be entitled to nominate one or more of their members for election to the Board of Directors of such Association on the basis of the number of registrations received during the last calendar year from such Provinces, as follows:—One representative for 100 registrations, until the limit of 15 for the whole Association is reached, when the basis of representation shall be re-adjusted equitably.

Provided also that for the Province where the annual meeting is held candidates for election to the Board of Directors shall be nominated and elected by the members from the Province attending such meeting.

(2) The ballots containing a complete list of the eligible members in said Province previously prepared by the Secretary of the Record Association shall be mailed by him to each member residing within each Province other than where the meeting is being held, at least sixty days prior to the annual meeting of said Association.

(3) Not less than twenty days before the annual meeting the said ballots shall be opened and counted in the presence of a Notary Public by the Secretary, who shall submit the names of the successful candidates, together with a solemn declaration as to the correctness of the count, to the annual meeting, and notify the member or members of the said Association of their nomination.

(4) Each affiliated Record Association shall pay out of its annual surplus to any kindred affiliated Provincial Live Stock Association, such sum as in the judgment of the Record Committee is proportionate to the amount received from said Province.

(5) The amount so paid shall be used in defraying any expenditure incurred in promoting the interests of the breed in the said Province.

The following recommendations were made by the Record Committee:

1st. That the Record Committee be given authority to suspend any official for what, in their judgment, may be considered improper conduct. In case of such suspension or vacancy from other causes the Record Committee shall have authority to make temporary arrangements for continuing the work, and shall immediately report the same to the Association or Associations interested for final action.

2nd. That instructions to Record officials be given through the Record Committee.

3rd. That the accountant be given authority of a chief clerk in the Record office.

4th. That the Record Committee shall have authority to make an agreement with the officials in the Record Office, covering the matter of salary, duties to be performed and term of office.

It was decided to change the fifth word in clause 4 of the Record Board's recommendation from "shall" to "may." The first clause of the Record Committee's recommendation was amended by adding the words "or discharge" after the ninth word. With these changes made the recommendations were approved of. After the election of officers and directors the meeting adjourned.

EXPERT JUDGES FOR SHEEP FOR 1906.

COTSWOLDS: T. Hardy Shore, Glanworth; R. Miller, Stouffville; S. J. Lyons, Norval; Val. Ficht, Oriol; Jas. Underhill, Claremont; F. Bonnycastle, Campbellford; Prof. G. E. Day, Guelph; R. P. Snell, Snelgrove; J. C. Snell, London; John Rawlings, Ravenswood; Wm. Thompson, Uxbridge; John Park, Burgessville.

Judges Nominated for Toronto T. Hardy Shore, Glanworth;
Robert Miller, Stouffville.

Judges Nominated for London S. J. Lyons, Noval;
Val. Ficht, Oriol.

Judges Nominated for Ottawa Jas. Underhill, Claremont;
F. Bonnycastle, Campbellford.

Judges Nominated for Chicago Prof. G. E. Day, Guelph;
Robert Miller, Stouffville.

LEICESTERS: R. J. Garbutt, Belleville; Jas. Fennell, Bradford; H. B. Jeffs, Bond Head; A. E. Archer, Warwick; Geo. Whitelaw, Guelph; Hardy Shore, Glanworth; Abraham Easton, Appleby; E. Wood, Appleby; Wm. Parkinson, Eramosa; E. Parkinson, Eramosa; John Orr, Galt; Wm. McIntosh, Burgoyne; R. Eastwood, Mimico; John Kelly, Shakespeare; Andrew Thompson, Fergus; J. K. Campbell, Palmerston; J. C. Snell, London; G. B. Armstrong, Teeswater; John Gibson, Denfield; C. E. Wood, Freeman; Jos. Gaunt, St. Helen's; J. M. Gardhouse, Weston; And. Whitelaw, Guelph; Wm. Whitelaw, Guelph; R. G. Martin, Marysville; A. W. Smith, Maple Lodge; H. G. Arnold, Maidstone; Prof. Craig, Ames, Ia.; John Marshall, Cass City, Mich.; J. W. Murphy, Cass City, Mich.; Prof. Curtiss, Ames, Ia.; Geo. Penhale, Exeter; Prof. G. E. Day, Guelph; M. Kennedy, Northwood; D. Lillico, Ayr; Jas. Douglas, Caledonia; Frank Shore, White Oak; John Gardhouse, Highfield; Wm. Beattie, Wilton Grove; A. J. McKay, Ailsa Craig; A. Hastings, Crosshill; J. Hastings, Crosshill; A. Deering, Crosshill.

Judges Nominated for Toronto J. M. Gardhouse, Weston;
(Reserve)..... Robert Garbutt, Belleville.

Judge Nominated for London A. Whitelaw, Guelph;

Judge Nominated for Ottawa Wm. Whitelaw, Guelph.

DORSETS: John Kelly, Shakespeare; Robert Miller, Stouffville; J. M. Gardhouse, Weston; John Campbell, Fairview; J. G. Hanmer, Brantford; Prof. Curtiss, Ames, Ia.; Thos. W. Hector, Springfield-on-Credit; G. P. Everett, Mt. Vernon; John A. McGillivray, Bedford Park; H. N. Gibson, Delaware; E. O. Denton, Somers, N.Y.; G. McKerrrow, Sussex, Wis.; John Jackson, Abingdon; Fred. Silversides, Uxbridge; R. H. Harding, Thorndale.

Judges Nominated for Toronto Arthur Danks, Allamuchy, N. Y.;
(Reserve)..... J. C. Duncan, Orchard Park, N.Y.

Judges Nominated for London J. G. Hanmer, Brantford;
(Reserve)..... J. M. Gardhouse, Weston.

SOUTHDOWNS: John Jackson, Abingdon; W. H. Beattie, Wilton Grove; W. H. Gibson, Beaconsfield, Que.; N. H. Gibson, Delaware; Robert Miller, Stouffville; Geo. Telfer, Paris; J. G. Hanmer, Brantford; J. C. Duncan, Orchard Park, N.Y.; Robert McEwen, Byron; H. L. Compton, Monroe, Ohio; Frank Klienhiertz, Madison, Wis.

OXFORDS: Prof. G. E. Day Guelph; John Harcourt, St. Ann's; Smith Evans, Guelph; Jas. Tolton, Walkerton; R. J. Hine, Dutton; Henry Arkell, Arkell; Wm. Dickson, Mildmay; Peter Arkell, Teeswater; J. H. Jull, Mt. Vernon; W. J. Arkell, Teeswater; John E. Cousins, Harriston; Arch. McKenzie, Corwhin; R. E. Birdsall, Birdsall; J. V. Cooper, Picton; Wm. Newman, Cherry Valley; Wm. Arkell, Teeswater; L. Parkinson, Eramosa; S. C. Ketchen, Bloomburg; W. Lee, Simcoe; J. A. Richardson, South March; Prof. M. Cumming, Truro, N.S.; Walter Elliott, Kelso.

Judges Nominated for Toronto L. Parkinson, Eramosa; Prof. G. E. Day, Guelph; Geo. McKerrrow, Sussex, Wis.; J. E. Cousins, Harriston; R. E. Birdsall, Birdsall.

Judges Nominated for London J. E. Cousins, Harriston;
(Reserve)..... John Harcourt, St. Ann's.

Judge Nominated for Ottawa James Tolton, Walkerton.

Judges Nominated for Winter Fair L. Parkinson, Eramosa;
(Reserve)..... H. S. Arkell, O. A. C., Guelph.

HAMPSHIRE AND SUFFOLKS: R. Gibson, Delaware; Henry Arkell, Arkell; W. H. Beattie, Wilton Grove; James Bowman, Guelph; John Kelly, Shakespeare; Geo. L. Telfer, Paris; G. E. Day, Guelph; H. N. Gibson, Delaware; W. H. Arkell, Guelph; W. R. Bowman, Mt. Forest; John Campbell, Woodville; R. J. Stone, Stonington, Ill.; J. Milton, Marshall, Mich.; Harry Thornton, Warren, Ind.; Frank Klienhiertz, Madison, Wis.

Judge Nominated for Toronto H. S. Arkell, O. A. C., Guelph.

Judge Nominated for London W. H. Beattie, Wilton Grove.

Judge Nominated for Ottawa John Campbell, Woodville.

LINCOLNS: John Gardhouse, Highfield; Wm. Oliver, Avonbank; F. H. Neil, Lucan; Leonard Parkinson, Eramosa; Robert Robson, Ilderton; J. H. Patrick, Ilderton; J. T. Gibson, Denfield; W. H. Taylor, Park Hill.

SHROPSHIRE: W. H. Beattie, Wilton Grove; R. Miller, Stouffville; J. G. Hanmer, Brantford; J. Campbell, Woodville; D. G. Hanmer, Burford; W. G. Pettit, Freeman; D. J. Campbell, Woodville; H. N. Gibson, Delaware; Geo. Hindmarsh, Ailsa Craig; C. W. Gurney, Paris; J. Miller, Brougham; H. Hanmer, Burford; J. C. Duncan, Orchard Park, N.Y.; Prof. G. E. Day, Guelph; Arthur Barnett, Brooklin; J. Shields, Caistorville; Geo. Crawford, Minesing; John Jones, Burford; W. D. Monkman, Bond Head; Will. Dryden, Brooklin.

Judges Nominated for Toronto J. C. Duncan, Orchard Park, N.Y.;
(Reserve)..... John Miller, Brougham.

Judge Nominated for London J. Shields, Caistorville.

Judge Nominated for Ottawa D. G. Hanmer, Burford.

Judges Nominated for Winter Fair,

Guelph J. C. Duncan, Orchard Park, N.Y.;
(Reserve)..... Robert Miller, Stouffville.

OFFICERS FOR 1906.

President J. M. GARDHOUSE, Weston.

Vice-President JOHN CAMPBELL, Woodville.

Secretary-Treasurer A. P. WESTERVELT, Toronto.

Directors:

Cotswolds Lt.-Col. D. McCRAE, Guelph.

Leicesters AND. WHITELOW, Guelph.

Hampshires and Suffolks GEO. TELFER, Paris.

Southdowns JOHN JACKSON, Abingdon.

Dorsets Lt.-Col. J. A. MCGILLIVRAY, Bedford Park.

Lincolns J. T. GIBSON, Denfield.

Oxfords T. R. ARKELL, Arkell.

Shropshires WM. DRYDEN, Brooklin.

Ontario Agric'l College Prof. G. E. DAY, Guelph.

General Director R. H. HARDING, Thorndale.

Auditor J. M. DUFF, Guelph.

Delegates to Fair Board:

Canadian National Hon. JOHN DRYDEN, Toronto.

J. G. HANMER, Brantford.

Central Canada N. F. WILSON, Cumberland;

J. B. SPENCER, Ottawa.

Western Fair, London Lt.-Col. R. McEWEN, Byron;

GEO. TELFER, Paris.

Provincial Winter Fair A. W. SMITH, Maple Lodge;

JOHN JACKSON, Abingdon;

Lieut.-Col. R. McEWEN, Byron.

Eastern Ontario Live Stock and

Poultry Show J. M. GARDHOUSE, Weston.

J. G. CLARK, Ottawa;

J. A. RICHARDSON, South March.

DIRECTOR'S MEETING.

A meeting of the Directors of the Dominion Sheep Breeders' Association was held immediately after the annual meeting.

The following Committees were appointed:

Advisory Board:—A. W. SMITH, Maple Lodge; Lt.-Col. J. A. MCGILLIVRAY, Bedford Park; J. M. GARDHOUSE, Weston.

Record Board:—J. M. GARDHOUSE, Weston; Lieut.-Col. J. A. MCGILLIVRAY, Bedford Park.

Some discussion took place over the report that sheep were being brought in from the States for feeding purposes at a very low valuation. It was thought advisable that the minimum valuation should be increased to \$3 per head for lambs and \$5 per head for sheep. The Executive and Lieut.-Col. D. McCrae were appointed a committee to take up the question.

It was decided to instruct Messrs. Dryden and Hanmer to ask the Canadian National Exhibition to add two sections to the classification for each breed of sheep; that is, a section for "Wether one year and under two," and "Wether under one year."

It was decided to ask the Winter Fair Executive to consider the following changes for the prize list:

(1) "That there be two classes for grade sheep at the Provincial Winter Fair, one class for long woolled wethers, and one class for medium woolled wethers; no classification to be made for grade ewes; long woolled grades to be those sired by a pure-bred ram of one of the long woolled breeds; and medium woolled grades to be sired by pure-bred ram of one of the medium woolled breeds; the breed and registered number of sire to be given at the time of making entry."

(2) "That there be a champion prize for wethers in each sheep class and a grand championship prize open to all winners of championships."

The meeting then adjourned.

MEMBERS OF THE DOMINION SHEEP BREEDERS' ASSOCIATION FOR 1905-1906.

Name and Address.	Breed.	Name and Address.	Breed.
Baker, G. W. A., Trafalgar	Dorset Horn.	Kitchen & Stafford, Blooms-	
Bailey, Sam'l., Forest	Cotswold.	burg	
Baldon, John I., Markham		Kelly, John, Shakespeare ..	Hampshire and
Brethour, J. E., Burford			Leicester.
Beith, Robert, Bowmanville		Lee, J. W., & Son, Simcoe ..	Oxford.
Bright, John, Myrtle		Leonard, Chas., Corning,	
Brien & Son, Wm. Ridgetown	Oxford.	Iowa	
Bowman, Jas., Guelph	Suffolk & Dorset	Lloyd-Jones Bros., Burford ..	Shropshire.
Campbell, John, Woodville	Shropshire.	Luxton, A. G. H., Milton	Dorset Horn.
Calder, Chas., Brooklin		Linden, J., Arva	Lincoln.
Christie, Peter, Manchester	Shropshire.	Miller, Robt., Stouffville	Shropshire.
Cousins, J. & Sons, Harriston	Oxford.	Mitchell, John, Glencoe	
Cottrelle, G. E., Milton	Leicester.	Monkman, W. D., Bond Head ..	Shropshire.
Cook, Jas., Myrtle		McCrae, D., Guelph	Southdown and
Cox, T. A., Brantford			Cotswold.
Dawson, Adam, Cannington		McEwen, Robert., Byron	Southdown.
Dryden, Wm., Brooklin	Shropshire.	McNelly, Hugh, Arkell	Cotswold.
Dryden, John, Toronto	Shropshire.	McGillivray, J. A., Bedford	
Dickson, Jas., Orono		Park	Dorset Horn.
Douglas, E. J., Galt	Southdown.	Orr, John, Galt	Leicester.
Drummond, Hon. G. A., (W.		Parkinson, L., Eramosa	Lincoln.
H. Gibson, manager) Bea-		Parkinson, G. & W., Eramosa ..	Lincoln.
consfield, Que.	Southdown.	Parkinson, Ernest, Eramosa ..	Lincoln.
Evans, David, Somenos, B.O.	Southdown.	Patrick, J. H., Ilderton	Lincoln.
Edwards, W. C., Rockland	Shropshire.	Park, E. L., Burgessville	Cotswold.
Elliot, And., Pond Mills	Oxford	Pettit, W. G., & Sons, Free-	
Foster, J. G., Moira		man	Shropshire.
Foster, Lorne, Myrtle		Richardson, J. A., South	
Garbutt, R. J., Belleville	Leicester.	March	Oxford.
Gardhouse, J. M., Weston	Leicester.	Richardson, John, Mayne, B.O.	
Gardhouse, J & Son, High-		Ross, J. C., Jarvis	Cotswold.
gate	Leicester.	Robertson, Jas., Milton	Dorset Horn.
Geary, John, London	Lincoln.	Ross, T. H., Burford	
Gibson, J. T., Denfield	Lincoln.	Rudell, Abram, Hespeler	Shropshire.
Gibson, Rich., Delaware	Shropshire.	Saunders, C. F., Burford	
Gurney, C. G., Paris		Stewart, A. M., Dalmeny	Shropshire.
Harding, R. H., Thorndale	Dorset Horn.	Stewart, Alex., Living Springs ..	Oxford.
Hanmer, D. G. & Son, Mt.		Snell & Lyons, Snelgrove	Cotswold.
Vernon	Shropshire.	Stevenson, A., Attwood	Oxford.
Hastings Bros., Crosshill	Leicester.	Smith, A. W., Maple Lodge	Leicester.
Hanmer, J. G. Brantford	Shropshire.	Smith, John, Beachville	Leicester.
Hine, R. J., Dutton	Oxford.	Smith, W. M., Scotland	Merino.
Hood, G. B., Guelph	Leicester.	Stone, R. J., Stonington, Ill.	Oxford.
Hodson, F. W., Toronto		Shortreed, Black & Arm-	
Hunter, John, Wyoming	Dorset.	strong, Fergus	Lincoln.
Innes, Donald, Tobique River,		Taylor, W. H., Parkhill	
N.B.	Shropshire.	Telfer Bros., Paris	Southdown.
Jackson, John, Abingdon	Southdown.	Tolton, Jas., Walkerton	Oxford.
Jeffs, E. & Son, Bond Head	Southdown and	Underhill, Jas., Claremont	
	Leicester.	Vance, Robert, Ida	Cotswold.
Johnston Bros., Underwood	Leicester.	Whitelaw, A. & W., Guelph	Leicester.
Johnston, Arthur, Greenwood		Wright, John, Mohawk	Leicester.
Jones, Wm., Mt. Zenda		Wright, John, Chesley	Leicester.
Johnston, Jas., Trafalgar	Dorset Horn.	Wright, W. E., Glanworth	Shropshire.
Jull, J. H., Burford	Oxford.	Young, John, Abingdon	

Dominion Swine Breeders' Association.

ANNUAL MEETING.

The annual meeting of the Dominion Swine Breeders' Association was held in the Palmer House, Toronto, on Thursday, February the 8th, 1906, at 2 p.m. The President, Thos. Teasdale, was in the chair.

On motion the minutes of the last meeting were adopted.

DIRECTORS' REPORT.

The Secretary read the following report as submitted by the Directors:

RECORDS.—At the last annual meeting of this Association the following resolution was passed:—"That the Dominion Swine Breeders' Association at once proceed to nationalize their Association and records; that the office be transferred from Toronto to Ottawa; that J. W. Nimmo be Registrar, and that John Dryden, Jos. Featherston, A. P. Westervelt, D. C. Flatt, J. E. Brethour, Robert Vance, and J. C. Smith be a committee to meet with the Live Stock Commissioner and at once complete arrangements."

A meeting of the committee was held and application for incorporation under the Dominion Act was made to the Dominion Department of Agriculture. The papers of incorporation were issued and the following agreement entered into:

It is hereby agreed and covenanted between the Dominion Department of Agriculture and the Dominion Swine Breeders' Association—

(1) That hereafter in this covenant the "Minister" shall mean the Minister of Agriculture for the Dominion of Canada; the "Department" shall mean the Department of Agriculture of the Dominion of Canada; the "Association" shall mean the Dominion Swine Breeders' Association; the "Commissioner" shall mean the Live Stock Commissioner for Canada; the "Seal" shall mean the Seal supplied by the Department of Agriculture to stamp each approved certificate of registration; the "Certificate" shall mean the approved Certificate of Registration issued by the Registrar under the rules of the Association; the "Registrar" shall mean that officer of the Dominion Swine Breeders' Association, chosen by the Executive, Directors or members of the Association to examine application forms sent by members of the Association or others wishing to record the pedigree of an animal, and to edit each volume of the Association's Record hereafter issued; "Application Forms" shall mean the regular printed forms supplied by the Association to members and others who wish to register a pedigree.

(2) It is further expressly understood and agreed that neither the Department nor any of its officers, clerks or employees, shall receive or administer any moneys belonging to or intended for the Association; but such moneys shall be received directly by such person or persons as the Association may appoint for that purpose, who shall be accountable to the Association for said moneys without any responsibility on the part of the Department for the

same; nor shall any of the officers, clerks or employees of the Department act in any capacity for the Association except as hereinafter expressly provided.

(3) That in case the Minister or any officer of the Dominion Government furnishes money to aid any undertaking of the Association, the officers, directors and servants of the Association shall alone be responsible for the expenditure of the said money, in accordance with the instructions given by the Minister or officer representing him, when said money is furnished.

(4) That the Association shall, under the Act Respecting the Incorporation of Live Stock Record Associations (assented to June 14th, 1900), under which the Association is incorporated, control and administer the affairs and finances of the Association, in accordance with the constitution and by-laws of the Association; except that the office of the Registrar shall be at Ottawa, and all certificates shall be issued therefrom.

(5) That the Department shall supply free of charge an office, heated and lighted, for the use of the Registrar and other persons similarly employed; and sufficient blank application forms and certificates, and stationery for the use of the Registrar when attending his official duties; and the regular postal messenger service.

(6) That under the direction of the Minister, the Commissioner, or a member of his staff set apart for the purpose, shall examine and approve, as hereinafter set forth, each certificate before affixing thereto the seal supplied by the Department.

(7) That the examination and approval of a certificate shall consist of a careful inspection of the application form to the Registrar of the Association by the breeder or owner of the animal, and of the certificate issued thereon. Said application form and certificate shall state the facts and meet the conditions demanded by the rules, by-laws, etc., of the Association; otherwise the seal shall not be affixed to the certificate.

(8) That the examination of the certificate and the affixing of the seal shall not be unduly delayed. If possible each certificate shall be examined, have the seal affixed and be mailed to the owner on the day in which it is issued by the Registrar.

(9) That the seal shall be at all times in the possession of the Commissioner or the senior clerk engaged in this work, and said seal shall only be used by one or other of these persons, and when not in use shall be locked in a secure place.

At a joint meeting of the representatives from the different Record Associations, the National Record Board was formed. A copy of the regulations under which the Board acts is published in the report of the Record Committee. The report will also give the particulars regarding the office work in the Record Office, and the division and proportion of salaries paid by the various Associations. The proportion of the salaries charged to the Swine Breeders' Association according to this statement, is \$703.29. On a commission basis, as was paid last year for the number of pedigrees recorded from the time of the transfer, namely 2,937 and 445 transfers, the cost would be \$778.75. This shows a saving of \$75.46 on the cost of recording. The following statement also shows a saving of \$562.50 on the postage and printing:

	Printing.	Postage.
1904	\$1,110 40	\$200 05
1905	717 45	30 50
	\$392 95	\$169 55

This makes a total saving of \$637.96.

Each Association contributing towards the salary of one Registrar was asked to pay towards the salary in proportion to the number of registrations in 1904, with the understanding that the proportion of each Association contributing would be finally adjusted at the end of the year according to the number of registrations during 1905. The Swine Breeders' Association was asked to pay to the end of December \$875.01 which amount is entered in financial statement. The final adjustment as published in the report of Record Committee shows that the proportion charged to the Swine Breeders' Association is \$703.29. This shows a surplus of \$171.72 in the hands of the Record Board belonging to Swine Breeders' Association, which when refunded will make a balance of \$2,557.06, instead of \$2,385.34, as shown on financial statement at the present time.

The number of pedigrees by breeds and by Provinces recorded during 1905, as received from the Registrar, Mr. J. W. Nimmo, is as follows:

Yorkshires	1,824	Poland Chinas	69
Berkshires	1,242	Essex	85
Tamworths	345	Duroc Jerseys	13
Chester Whites	337		

	Pedigrees.	Registration Transfers.	Fees.
Ontario	2,566	297	\$1,471 30
Manitoba	506	81	294 60
North West Territories	114	25	79 05
British Columbia	65	4	39 75
Quebec	210	40	143 40
New Brunswick	34	2	20 25
Nova Scotia	13	6	11 35
Prince Edward Island	28	...	16 00

STATEMENTS OF AUDITORS OF RECORDS.—Mr. Complin, of London, audited the accounts during the time the work was done by Mr. Wade, at Toronto, and Mr. Geo. L. Blatch, Chartered Accountant, of Ottawa, was appointed auditor for all the record books at Ottawa:

FINANCIAL STATEMENT OF RECORDS, TORONTO.

Receipts.

Registration fees	\$523 50
Fees for 111 members at \$2 ...	222 00

\$745 50

Disbursements.

Commissions on 875 pedigrees	
at 25 cents	\$218 75
Commission on 122 transfers at	
10 cents	12 20
Cash sent to secretary	514 55

\$745 50

I hereby certify that I have checked all applications with Registrar, stubs of membership receipts and cash book entries and find the Financial Statement correct and in accordance therewith.

(Signed) CHAS. F. COMPLIN, Auditor.

Toronto, June 23rd, 1905.

FINANCIAL STATEMENT OF RECORDS, OTTAWA.

<i>Receipts.</i>	<i>Disbursements.</i>
Registration fees and trans- fers \$1,686 85 Membership fees 230 00	Cash sent to Toronto. \$126 85 Expenses deducted ... 3 65 \$130 50 Cash received to Dec. 31st and deposited.. 1,818 15 Cash received January, 1906, and deposited 11 80 \$1,960 45 Balance \$43 60
\$1,916 85	

Ottawa, January 23rd, 1906.

(Signed) GEO. L. BLATCH, C.A., Auditor.

QUEBEC RECORDS.—The following resolution was passed at a meeting of the general Breeders' Association of the Province of Quebec:

"That this Committee advise the general meeting that the Quebec Sheep Breeders' Association and the Quebec Swine Breeders' Association be continued as heretofore; that the annual membership fees remain the property of the respective Associations; that the Secretary of each of these Associations keep the Registrar for the National Sheep and Swine Records informed as to whom the members are; that these members enjoy all the privileges of membership in the Dominion Sheep and Swine Breeders' Associations; that the National Record Board be requested to cause to be issued an annual statement showing the receipts for registration from each Province for each breed or class of stock, the expenses incurred because of such registration, also the net profits on registration from each Province as above indicated; that the net profits from registering sheep and swine from the Province of Quebec be annually returned to said Quebec Associations respectively, to be administered by the officers of each of said Associations as directed by the members and expressed at an annual or general meeting; that F. W. Hodson be asked to meet the officers and members of the Dominion Sheep and Swine Breeders' Associations, and, if possible, procure the above privileges for the Quebec Association and breeders."

RECOMMENDATIONS FROM RECORD BOARD.—Some recommendations passed by the full meeting of the National Record Board at Ottawa last spring are included in the report of the Record Committee and special attention is drawn to these recommendations.

SWINE SALES.—Following a suggestion in the last report regarding provincial sales of swine a circular letter was sent out last June to all members of the Swine Breeders' Association, stating that sales of swine had been suggested and asking the following questions:—

1. Do you think it wise to hold a public auction sale?
2. What breeds could be successfully sold at a public sale of this kind, and what ages?

3. How many of each breed should be put up for sale?

4. What date would be most suitable?

5. How many pigs would you be able to contribute?

Only 29 replies were received to the 190 circulars sent out, 16 being favorable to a sale, 10 were opposed and 3 were indifferent. Your Committee did not consider this sufficiently encouraging to warrant a sale.

As some of the packing houses were anxious that a sale of Yorkshires should be held in the western part of the Province, the breeders of Yorkshires who had signified their willingness to contribute were communicated with, with the result that a combination sale was arranged, the packing houses agreeing to give some financial assistance. The points suggested were Thedford and Bothwell. There were sold at Thedford 23 sows and 6 boars and at Bothwell 24 sows and 7 boars.

WINTER FAIR, GUELPH AND EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW.—(See clauses under these headings in the Report of the Dominion Cattle Breeders' Association, page 6.)

SPECIAL PRIZES GIVEN AT WINNIPEG AND BRANDON.

Winnipeg Exhibition.

Junior Champion Berkshire Boar—Stanford Staples, Souris, Man.
 Junior Champion Berkshire Sow—Stanford Staples, Souris, Man.
 Junior Champion Yorkshire Boar—Wellington Hardy, Roland, Man.
 Junior Champion Yorkshire Sow—A. B. Potter, Montgomery, Assa.
 Junior Champion Tamworth Boar—T. E. M. Banting, Banting, Man.
 Junior Champion Tamworth Sow—A. W. Caswell, Neepawa, Man.
 Senior Champion Poland China Boar—W. L. Trann, Crystal City, Man.
 Senior Champion Poland China Sow—W. L. Trann, Crystal City, Man.

Brandon Exhibition.

Berkshire Sow, any age—J. M. Ewens, Minnedosa, Man.
 Improved Yorkshire Sow, any age—T. E. M. Banting, Banting, Man.
 Tamworth Sow, any age—W. M. Smith, Scotland, Ont.
 Poland China Sow, any age—T. E. M. Banting, Banting, Man.

DIVISION OF SURPLUS MONEY IN THE SWINE BREEDERS' ASSOCIATION.—It is recommended that \$2,000 of the surplus money in the hands of the Dominion Swine Breeders' Association, should be divided among the different Provinces on the basis of the amount of registration fees received from the different provinces during 1905. This division would result in money being due to the Provincial Associations in the various provinces in the following amounts but it would probably be better to allow even amounts as shown in the second column.

Ontario	\$1,417.64	\$1,400.00
Quebec	138.18	140.00
Manitoba	283.86	285.00
British Columbia	38.30	40.00
Nova Scotia	10.93	15.00
New Brunswick	19.51	20.00
Prince Edward Island	15.42	20.00
North West Territories	76.16	80.00
	\$2,000.00	\$2,000.00

It is recommended that the money be paid to the Provincial Associations representing swine, to be spent in the swine interests in other Provinces than Ontario and in the case of the Ontario money, that it should be given in prizes for swine at the following amounts on condition that the fairs interested shall add in addition to the grant an equal amount to the regular

classification for swine, with the exception of the Canadian National Exhibition, the Provincial Winter Fair and the Eastern Ontario Live Stock and Poultry Show, which fairs shall maintain their regular classification as in 1905 :

Provincial Winter Fair	\$200
Canadian National Exhibition	300
Western Fair, London	150
Central Canada Exhibition, Ottawa	150
Eastern Ontario Live Stock and Poultry Show	100

This will leave \$500 to the credit of the Ontario account.

FINANCIAL STATEMENT

For the year ending December 31st, 1905.

<i>Receipts.</i>		<i>Expenditure.</i>	
Cash on hand from previous year as per last report	\$2,094 24	Directors' fees and expenses...	\$17 00
Members' fees	620 00	Postage and stationery	53 29
Registration fees, May 1st, \$523.50, less Commission to Registrar, \$230.95	292 55	Printing	738 72
Registration fees, May 1st to Dec. 31st	1,730 95	Levy for Record Board	875 01
Sale of volumes of Records ...	6 00	Grant to Winnipeg Exhibition, 1904	\$300
Interest	57 32	Grant to Winnipeg Exhibition, 1905	84 384 00
		Grant to Toronto Exhibition..	300 00
		Office expenses	4 52
		Telegraph, telephone and express	9 23
		Delegates to Fair Boards	16 50
		Auditors	10 00
		Annual meeting	7 00
		Exchange	45
	\$4,801 06		\$2,415 72
		Balance	2,385 34

Examined and found correct this 30th day of January, 1906.

(Signed) J. M. DUFF, Auditor.

All of which is respectfully submitted,

THOS. TEASDALE, President.
R. H. HARDING, Vice-President.
A. P. WESTERVELT, Secretary-Treasurer.

Moved by J. C. SMITH, seconded by R. H. HARDING,—“That the Report of the Directors be adopted.” Carried.

The following recommendations to Record Associations were unanimously passed by the National Record Board, and referred to the members of the Swine Breeders' Association for their consideration :

(1) In order that the Board of Directors of any Record Association may fairly represent the different Provinces of the Dominion, it is recommended that the various Record Associations adopt regulations as follows :

The members of any affiliated Record Association residing within the bounds of any Province shall be entitled to nominate one or more of their

members for election to the Board of Directors of such Association on the basis of the number of registrations received during the last calendar year from such Provinces as follows: One representative for 100 registrations, until the limit of fifteen for the whole Association is reached, when the basis of representation shall be readjusted equitably. Provided also that for the Province where the annual meeting is held candidates for election to the Board of Directors shall be nominated and elected by the members from the Province attending such meeting.

(2) The ballots containing a complete list of the eligible members in said Province previously prepared by the Secretary of the Record Association shall be mailed by him to each member residing within each Province other than where the meeting is being held, at least sixty days prior to the annual meeting of said Association.

(3) Not less than twenty days before the annual meeting the said ballots shall be opened and counted in the presence of a Notary Public by the Secretary, who shall submit the names of the successful candidates together with a solemn declaration as to the correctness of the count, to the annual meeting, and notify the member or members of the said Association of their nomination.

(4) Each affiliated Record Association shall pay out of its annual surplus to any kindred affiliated Provincial Live Stock Association, such sum as in the judgment of the Record Committee is proportionate to the amount received from said Province.

(5) The amount so paid shall be used in defraying any expenditure incurred in promoting the interests of the breed in the said Province.

The following recommendations were made by the Record Committee:

(1) That the Record Committee be given authority to suspend any official for what, in their judgment may be considered improper conduct. In case of such suspension, or vacancy from other causes, the Record Committee shall have authority to make temporary arrangements for continuing the work, and shall immediately report, the same to the Association or Associations interested for final action.

(2) That instructions to record officials be given through the Record Committee.

(3) That the Accountant be given authority of chief clerk in the Record Office.

(4) That the Record Committee shall have authority to make an agreement with the officials in the Record Office, covering the matter of salary, duties to be performed, and term of office.

It was decided to change the fifth word in Clause (4) of the Record Board's recommendations from "shall" to "may". The first clause of the Record Committee's recommendations was amended by adding the words "or discharge" after the ninth word.

Moved by JOSEPH FEATHERSTON, seconded by Lieut.-Col. J. A. MCGILLIVRAY,—“That the number of directors from Ontario shall remain as at present; and that each Province be represented on the Board of Directors in the same proportion as Ontario according to the number of registrations from each Province respectively, except that each of said Provinces shall be entitled to have one representative on the board if 100 registrations are received from that Province. The number of directors for each year shall be based on the number of registrations during the calendar year preceding the annual meeting for the election of directors.” Carried.

Moved by Hon. JOHN DRYDEN, seconded by A. W. SMITH,—“That the recommendation of the Record Board and the Record Committee be adopted as amended.” Carried.

A letter from Hon. NELSON MONTEITH, Minister of Agriculture, regarding the organization of an Advisory Board for live stock was presented and left in the hands of the directors to be dealt with.

Moved by A. W. SMITH, seconded by D. C. FLATT,—“That the proposed organization of an Advisory Board composed of gentlemen selected by the different Live Stock Associations is likely to result in the advancement of the prosperity of the live stock business and interests, and is deserving of the expressed appreciation of this Association, and that the same be conveyed to the Honorable the Minister of Agriculture for Ontario.” Carried.

Moved by GEORGE GREEN, seconded by D. C. FLATT, “That the Swine Breeders’ representatives to the Toronto Industrial Exhibition be instructed to ask that a separate class be added for Chester Whites.” Carried.

EXPERT JUDGES FOR 1906.

BERKSHIRES: Wm. Wilson, Snelgrove; J. C. Smith, Hintonburg; X. Plaunt, Northcote; Samuel Dolson, Alloo; Hugh G. Clark, Norval; P. W. Boynton, Dollar; Alex. Smith, Maple Lodge; Wm. Jones, Zenda; W. G. Cavan, East Toronto; Jas. McEwen, Kertch, John Boyes, Jr., Churchill; Henry Jones, Zenda; H. J. Davis, Woodstock; J. C. Snell, London; Thos. Teasdale, Concord; Geo. Green, Fairview; Robert Vance, Ida; T. A. Cox, Brantford; Jas. Quirie, Delaware; Jos. Featherston, Streetsville; R. P. Snell, Snelgrove; C. R. Decker, Chesterfield; Chas. Youngs, Brookside; D. DeCoursey, Bornholm; R. H. Harding, Thorndale; Jos. Barnett, Brooklyn; E. E. Martin, Canning; H. B. Jeffs, Bond Head; Wm. Linton, Aurora; E. Brien, Ridgetown; G. B. Hood, Guelph; J. E. Brethour, Burford; Alex. Hart, Hampstead; W. A. Shields, Milton; D. J. Gibson, Bowmanville; S. J. Lyons, Norval; A. Johnston, Greenwood; C. C. McAvoy, Atha; J. L. Clark, Norval; Aiken Dolson, Alloo; John Watkins, Norval; D. C. Flatt, Millgrove; W. H. Durham, Toronto; Wm. Hartley, Alloo; John Bright, Myrtle; Frank Teasdale, Concord; Douglas Thomson, Woodstock; J. Weir, Northfield Centre.

Judges Recommended for Toronto Robert Vance, Ida; H. Clark, Alloo; H. B. Jeffs, Bond Head; E. E. Martin, Canning, R. P. Snell, Snelgrove; Geo. Green, Fairview.

Judges Recommended for London Samuel Dolson, Alloo; R. Vance, Ida; Wm. Wilson, Snelgrove; H. Clark, Alloo; H. B. Jeffs, Bond Head; R. P. Snell, Snelgrove; Thos. Teasdale, Concord; John Kelly, Shakespeare.

Judges Recommended for Ottawa Robert Vance, Ida; S. J. Lyons, Norval; R. P. Snell, Snelgrove; John Kelly, Shakespeare.

Provincial Winter Fair, Guelph Geo. Green, Fairview; H. B. Jeffs, Bond Head; Robert Vance, Ida; Thos. Teasdale, Concord; Peter McEwen, Kertch; Geo. Cavan, Toronto.

YORKSHIRES AND TAMWORTHS: David Barr, Jr., Renfrew; E. A. Kipp, Chilliwack, B.C.; Jas. Bray, Longburn, Man.; Lou Rogers, Weston; Geo. D. Betzner, Copetown; R. J. Kerr, Mimosa; W. R. Bowman, Mount Forest; Wm. Jones, Zenda; R. J. Garbutt, Belleville; R. H. Harding, Thorndale; N. M. Blain, St. George; J. H. Simonton, Chatham; G. North, Marden; A. Elliott, Galt; L. F. Master, Haysville; A. C. Hallman, Breslau; D. G. Hanmer, Burford; John Nichol, Hubrey; J. E. Brethour, Burford; A. Laurie, Wolverton; Wm. Davies, Toronto; Richard Gibson, Delaware; Henry Dedels, Kossuth; G. B. Hood, Guelph; F. Shore, White Oak; Jos. Featherston, Streetsville; H. E. Sharp, Ida; A. F. McGill, Hillsburg; J. M. Hurley, Belleville; Geo. Gier, Grand Valley; Jas. Stephen, Trout River, Que.; R. McCulloch, Harriston; Jos. Fletcher, Oxford Mills; Robert Nichol, Brussels; A. F. Foreman, Collingwood; Jas. Leach, Toronto; Wm. Howe, North Bruce;

Prof. G. E. Day, Guelph; H. J. Davis, Woodstock; D. C. Flatt, Millgrove; W. R. McDonald, Ridgetown; W. Elliott, Galt; R. G. Martin, Marysville; J. E. Cousins, Harriston; Geo. Green, Fairview; J. W. Callbeck, Augustine Cove, P.E.I.; J. G. Clark, Ottawa; J. C. Smith, Hintonburg; D. Drummond, Myrtle; H. B. Jeffs, Bond Head; And. Graham, Pomeroy, Man.; A. Carey, Millgrove; Jas. Yule, East Selkirk, Man.; A. W. Ross, Bromley; J. J. Pearson, Cooksville; R. F. Duck, Port Credit; Duncan Anderson, Rugby; Thos. Hurley, Belleville; J. H. Gridale, Ottawa; A. A. Colwill, Newcastle; M. Cumming, Truro, N.S.; R. O. Morrow, Hilton; Geo. Douglas, Mitchell; Jas. Douglas, Mitchell; A. P. Ketchen, Winnipeg, Man.; W. A. Trann, Cedar Grove; P. O. Collins, Bowesville, Que.; O. Foster, Myrtle; J. G. Foster, Myrtle; J. R. Flatt, Millgrove; J. Duck, Port Credit; Ken. Featherston, Springfield-on-Credit; W. J. Black, Winnipeg, Man.; A. B. Potter, Montgomery, Sask.; Herbert German, St. George; Wm. Wilson, Fergus; D. Currie, Morris-town; Gus. A. Langelier, Quebec; Richard Birch, Anderson.

Judges Recommended for Toronto Wm. Jones, Zenda;

R. J. Garbutt, Belleville.

Judges Recommended for London A. C. Hallman, Breslau;

(Reserve) G. B. Hood, Guelph.

Judges Recommended for Ottawa D. C. Flatt, Millgrove;

(Reserve) J. E. Brethour, Burford.

Provincial Winter Fair, Guelph Prof. G. E. Day, Guelph;

D. C. Flatt, Millgrove;

Bacon Hogs..... R. J. Garbutt, Belleville;

Wm. Jones, Zenda.

ESSAY: R. P. Snell, Snelgrove; G. B. Hood, Guelph; R. J. Garbutt, Belleville; R. H. Harding, Thorndale; Wm. Jones, Zenda; Jas. Main, Milton.

DURCO-JERSEYS: D. C. Flatt, Millgrove; D. DeCoursey, Bornholm; G. B. Hood, Guelph; Geo. Green, Fairview; Wm. Jones, Zenda; J. E. Brethour, Burford; R. H. Harding, Thorndale; W. M. Smith, Scotland; Geo. Bennett, Charing Cross; Jos. Featherston, Streetsville; W. Wilson, Snelgrove; Prof. G. E. Day, Guelph; Jos. McGarvin, Chatham; W. N. Tape, Bentpath.

POLAND CHINAS: Jos. Featherston, Streetsville; D. DeCoursey, Bornholm; Geo. Green, Fairview; Wm. Jones, Zenda; W. M. Smith, Scotland; R. H. Harding, Thorndale; R. Willis, Glen Meyer; Prof. G. E. Day, Guelph.

CHESTER WHITES: E. D. George, Putnam; R. E. Birdsall, Birdsall; Albert Barachy, Bloomington; Wm. Jones, Mt. Elgin; J. C. Snell, London; Geo. Green, Fairview; D. DeCoursey, Bornholm; R. H. Harding, Thorndale; G. B. Hood, Guelph; Gideon Snyder, Jarvis; Jos. Featherston, Streetsville; G. Bennett, Charing Cross; J. E. Brethour, Burford; J. C. Nichol, Hubrey; Prof. G. E. Day, Guelph; W. E. Wright, Glanworth; Robert Clark, Ottawa; D. C. Flatt, Millgrove; Geo. Douglas, Mitchell; J. C. Smith, Hintonburg; R. J. Garbutt, Belleville.

Judges Recommended for London D. C. Flatt, Millgrove;

Jos. Featherston, Streetsville.

Judges Recommended for Toronto If Chester Whites are shown by themselves, G. B. Hood; but if breeds are shown together, R. J. Garbutt, Belleville.

Judges Recommended for Ottawa Jos. Featherston, Streetsville;

G. B. Hood, Guelph, Ont.;

Judge Recommended for Sharpe Butterfield, Windsor.

Provincial Winter Fair, Guelph G. B. Hood, Guelph.

DIRECTORS' MEETING.

Immediately after the annual meeting the directors met and appointed the following representatives:—

To Advisory Board R. H. Harding, Thorndale;
D. C. Flatt, Millgrove;
J. E. Brethour, Burford.

To Record Committee Hon. John Dryden, Toronto;
J. E. Brethour, Burford.

OFFICERS FOR 1906.

<i>Honorary President</i>	F. W. HODSON, Dominion Live Stock Commissioner, Ottawa.
<i>President</i>	R. H. HARDING, Thorndale.
<i>Vice-President</i>	D. C. FLATT, Millgrove.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT, Toronto.
<i>Registrar</i>	J. W. NIMMO, Ottawa.
<i>Directors:</i>	
Berkshires	GEO. GREEN, Fairview.
Yorkshires	J. E. BRETHOUR, Burford.
Chester Whites	D. DECOURCEY, Bornholm.
Poland Chinas	WM. JONES, Zenda.
Duroc Jerseys	W. M. SMITH, Scotland.
Tamworths	J. C. SMITH, Hintonburg.
Essex	JOS. FEATHERSTON, Streetsville.
General Director	THOS. TEASDALE, Concord.
Ontario Agricultural College	PROF. G. E. DAY, Guelph.
Dominion Live Stock Commissioner	F. W. HODSON, Ottawa.
<i>Auditor</i>	J. M. DUFF, Guelph.
<i>Representatives to Fair Boards:</i>	
Toronto, Industrial	D. C. FLATT, Millgrove; SAMUEL DOLSON, Alloo.
Ottawa	ROBERT CLARK, Ottawa; P. COLLINS, Jr., Bowesville.
London	GEO. GREEN, Fairview; D. DECOURCEY, Bornholm.
Peterborough	ROBERT VANCE, Ida.
Guelph	G. B. HOOD, Guelph.
Belleville	J. M. HURLEY, Belleville.
Kingston	R. J. GARBUTT, Belleville.
Provincial Winter Fair	PROF. G. E. DAY, Guelph; G. B. HOOD, Guelph; WM. JONES, Zenda.
Eastern Ontario Live Stock and Poultry Show	R. H. HARDING, Thorndale; DAVID BARR, Jr., Renfrew; ROBERT CLARK, Ottawa, Ont.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION FOR 1905-1906.

Name and Address.	Breed.	Name and Address.	Breed.
Agnew, Thos., Tottenham ..	Yorkshire.	Bedlow, John, Brockville ..	Berkshire.
Allin, Fred T., Hampton ..	Yorkshire.	Bell, John F., Leamington ..	Berkshire.
Aitcheson, Wm., Lambton ..	Yorkshire.	Beingessner, F. C., Mildmay ..	Berkshire.
Mills	Yorkshire.	Bredt, P. M., Regina, Sask. ..	Yorkshire.
Allison, David, Roland, Man.	Berkshire.	Brien & Son, E., Ridgetown ..	Berkshire.
Austin, W. R., Sapperton, B. C.	C. White.	Birch, Richard, Anderson ..	Yorkshire.
Banting, T. E. M., Banting, Man.	Tamworth.	Bilton, T. H., Hagersville ..	Berkshire.
Baldwin, W. E., Manitou, Man.	Tamworth.	Brown, F. W., Portage la Prairie, Man.	Berkshire.
Bryan, C. R. B., Durham, N. S.	Yorkshire.	Boyes, J., Churchill ..	Berkshire.
Balsdon, John I., Markham ..	Berkshire and Yorkshire.	Boyes, Enoch, Sperling, Man.	Yorkshire.
Barber, H. M., Gatineau Point, Que.	Yorkshire.	Brooks, J. D., Plum Coulee, Man.	P. China.
Blair, R., Elmside	Yorkshire.	Boynnton, P. W., Dollar ..	Berkshire.
Brandow, C. W., Walsingham Centre	C. White and Tamworth.	Bonnycastle, C. E., Campbellford ..	Yorkshire.
Barr, D., Renfrew	Yorkshire.	Brown, Fred. A., Manitou, Man.	Yorkshire.
Baldwin, C., Emerson, Man.	Yorkshire.	Brooksbank, A., Aurora ..	Berkshire.
Bradley, J. T., Gilbert Plains, Man.	Yorkshire.	Bove, B. F., Kelowna, B.C.	Yorkshire.
Badley, Ed., Pense, Sask.	Berkshire.	Brown Bros., Ellisboro, Assa.	Berkshire.
Brethour, J. E., Burford ..	Yorkshire.	Bowman, T. E., High River, Alta.	Berkshire.
Benson, S., Neepawa, Man.	Yorkshire.	Bouchen, W. J., Valley River, Man.	P. China.
Beaton, Duncan, Omemee, N. Dak.	Yorkshire.	Browne, Mrs. Walter, Deloraine, Man.	Berkshire.
		Bulstrode, C. G., South Qu'Appelle, Assa.	Berkshire.
		Burkholder, Noah, Cherrywood ..	Berkshire.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION.—Continued.

Name and Address.	Breed.	Name and Address.	Breed.
Cavan, Geo., Box 1052, Toronto	Berkshire.	Duthie, Jas., Hartney, Man.	Berkshire.
Campbell, Geo., Killarney, Man.	Tamworth.	Duncalfe, W. P., Cartwright, Man.	Berkshire.
Campbell, R. J., Havergal	Berkshire.	Dunbar, J., St. Mary's	Berkshire.
Clark, J. G., Ottawa	Yorkshire.	Durham, W. H., Box 1052, Toronto	Berkshire.
Clark, H. G., Norval	Berkshire.	Dunn, J. A., Wooler	Berkshire.
Craig, Samuel C., Carsonby	Yorkshire.	Ewens, Jas. M., Minnedosa, Man.	Berkshire.
Chapman, F. M., Audley	Yorkshire.	Ewen, John, Marden, Man.	Berkshire.
Carruthers, W. T., Fenella	Yorkshire.	Ede, P. D., Oxford Centre	Yorkshire.
Campbell, D., Boissevain, Man.	Berkshire.	Elliott, Dr. H. J., Miami, Man.	Berkshire.
Clark, J. W., Cainsville	Yorkshire.	English, W. H., Harding, Man.	Berkshire.
Carruthers, C. & J., Cobourg	Berkshire.	English, Wm. & Geo. E., Petrolea	Yorkshire.
Callbeck, J. W., Augustine Cove, P.E.I.	Yorkshire.	Eadon, Jas. H., Bainsville	Berkshire.
Clark, P., Ottawa	C. White.	Elliott, John, Marden	Yorkshire.
Clark, W. W., Napinka, Man.	Berkshire.	Ellerton, J. & Son, Lavender	Yorkshire.
Clark, Robert, Ottawa	C. White.	Flatt & Sons, D. C., Millgrove	Yorkshire.
Clark, J. L., Norval	Berkshire.	Fraser, J. A., Portage la Prairie, Man.	Berkshire.
Channel, H. A., Stanstead, Que.	C. White.	Fraser & Sons, D., Emerson, Man.	Berkshire.
Crandell & Son, S. D., Cherry Valley	Yorkshire.	Fraser, W. H. A., Ottawa	Yorkshire.
Caswell, A. W., Neepawa, Man.	Tamworth.	Flett, P., Shopland, B.C.	Berkshire.
Clark, J. G., Burwell Road	Yorkshire.	Fraser, Thos., Fairfax, Man.	Yorkshire.
Creighton, J. C., Hawley	Tamworth.	Featherston & Son, Streetsville	Yorkshire.
Central Experimental Farm, Ottawa	Yorkshire and Berkshire.	Fresby, E. S., Victoria Square	Yorkshire.
Christian, Hy., Shelbourne	Yorkshire.	Fletcher, G. D., Binkham	Berkshire.
Christie, Peter, Manchester	Yorkshire.	Ferguson, Jas., Dalmeny	Yorkshire.
Christie, D. J., Killarney, Man.	Tamworth.	Field, W. H. & J. O., Vanessa	Berkshire.
Christie, Arthur, Winchester	C. White.	Fisher Wesley W., Benmiller	P. China.
Cowieson, J. B., Queensville	Berkshire.	Ford, W. H., & John McFarlane, Dutton	Berkshire.
Cole, T. J., Bowmanville	Yorkshire.	Fox, A., Stockdale	Berkshire.
Collins, P. O., Bowesville	Yorkshire.	Fuller, F. L., Provincial Farm, Truro, N.S.	Yorkshire.
Cowan, J. S., Donegal	Berkshire.	Garbutt, R. J., Belleville	Yorkshire.
Colwill Bros., Newcastle	Tamworth.	Graham, And., Pomeroy, Man.	Yorkshire.
Connolly, Alf., Danville, Que.	Yorkshire.	Glazier, D. N., Brockville	Yorkshire.
Cousins & Son, J., Harrison	Yorkshire.	Graham, G. W., Udora	Yorkshire.
Crowell, W. N., Napinka, Man.	Berkshire.	Graham, John, Ottawa	Yorkshire.
Cole & Son, R. H., Wooler	Yorkshire and Berkshire.	Green, Geo., Fairview	Berkshire.
Coates, Wm., Snelgrove	Berkshire.	Green, F. L., Greenwood	Yorkshire.
Cottrelle, G. E., Milton	Berkshire.	Greenway, Hon. Thos., Crystal City, Man.	Yorkshire.
Cooke, G. F., Grand Coulee, Sask.	Berkshire.	Greenwood, Thos., Douglas, Man.	Berkshire.
Cornish, A. E., Broadview, Sask.	Yorkshire.	German, Herbert, St. George	Tamworth.
Crowe, J. W., Gilbert Plains, Man.	C. White.	Gregg, T. G., Salford	Berkshire.
Currie, C., Morriston	Tamworth.	Glenhudson Co., Myrtle Station	Yorkshire.
Curtis, A. E., Stanstead, Que.	C. White.	Gellespie, W., Roblin, Man.	Yorkshire.
Davis, H. J., Woodstock	Yorkshire.	Glen Bros., Didsbury, Alta.	Yorkshire.
Dalton, John, Victoria Harbor	C. White.	Glendonning, H. V., Harding, Man.	Yorkshire.
Dolson, Samuel, Alloa	Berkshire.	Grisdale Bros., Graham, Que.	Yorkshire.
Davidson, Herbert, Mount Nemo	Yorkshire.	Gibson, Richard, Delaware	Yorkshire.
Davies, Robert, Todmorden	Yorkshire.	Gibson, D. J., Newcastle	Tamworth.
DeCoursey, Daniel, Bornholm	Yorkshire and C. White.	Gilroy, G. A., Glen Buell	Berkshire.
Denison, W. S., Denison's Mills	C. White.	Griffith, D. D., Barrie Island	Yorkshire.
Deeks, J. D., North Williamsburg	C. White.	Goodlife, S. J., Sussex, N.B.	Yorkshire.
Dedela, H., Breslau	Berkshire.	Gould, J. P., Markham	Yorkshire.
Dennibeth, A., Carberry, Man.	Tamworth.	Groff, Israel, Alma	Berkshire.
Dickson, Jas., Orono	Yorkshire.	Goff, Wm. R., Glencoe	Berkshire.
Dryden, John, Toronto	Yorkshire.	Grove, J. L., Ringwood	Yorkshire.
Donaldson, Jas., Dewittville, Que.	C. White.	Gordon, C. A. R., Shelbrook, Sask.	Yorkshire.
Dodge, R. J., Cartwright, Man.	Yorkshire.	Guilbert, A., Letellier, Man.	Yorkshire.
Douglas, A. R., Franklin, Man.	Berkshire.	Gunn, D. & Son, Beaverton	Yorkshire.
Douglas & Son, D., Mitchell	Tamworth.	Harding, R. H., Thorndale	C. White.
Dolson, H. A., Alloa	Berkshire.	Halliday, Frank, Eldon, P. E. I.	Yorkshire.
Douglas, Robt. M., Tantallon, Sask.	Berkshire.	Hanser, Ignatius, Weisenburg	Yorkshire.
Duck & Son, R. F., Port Credit	Yorkshire.	Hardy, W., Roland, Man.	Yorkshire.
		Hadwen, G. H., Duncan's, B.C.	Berkshire.
		Harris, G. N., Lynden	Berkshire.
		Hammer, J. G., Brantford	Yorkshire.
		Hartley, W. S. A., Norval	Yorkshire.
		Harris, R. N., Gatineau	Point, Que.
			Yorkshire.
		Hanmer, D. G., Mount Vernon	Berkshire.

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION.—Continued.

Name and Address.	Breed.	Name and Address.	Breed.
Hawkins, R. C., Swan Lake, Man.	Yorkshire.	Lowden, M. L., Binbrook ..	Berkshire.
Hailman, A. C., Breslau	Tamworth.	Martin, R. G., Marysville ..	Yorkshire.
Hatch, E. A., Stratfordville ..	Yorkshire.	Martin, E. E., Canning	Berkshire.
Hamilton, Jas., Shakespeare.	Berkshire.	Mabon, W., Baldur, Man.	Berkshire.
Hannison, L. D., Crossland.	Yorkshire.	Mayloney, F. A., Chapeau, Que.	Yorkshire.
Hall, W. A., Stanbridge E., Que.	Tamworth.	Maharey, Wm., Russell	Yorkshire.
Haddon Bros., Turgoose, B.C.	Tamworth.	Maguire, A. S., Elgin, Man.	Yorkshire.
Henders, R. C., Carross, Man.	Berkshire.	Maynard, J. T., Chilliwack, B. C.	Duroc Jersey.
Hyslop, R., Brantford	Berkshire.	Martin, W. H. & Son, War-den, Que.	Berkshire.
Hyte, Geo. A., Shakespeare.	Yorkshire.	Mason, H., Scarboro	Berkshire.
Haining, Samuel, Highgate ..	Berkshire.	Mark, G. H., Oakwood	Berkshire.
Howett, Ira L., Keldon	Yorkshire.	Macaulay, T. B., Hudson Heights, Que.	Berkshire.
Hood, G. B., Guelph	Yorkshire.	Madget, Geo., Highfield	Berkshire.
Hodson, F. W., Ottawa	Yorkshire.	Martin, W. A., Gilead	Berkshire.
Hoskins, B., The Gully	Tamworth.	Meredith, J. E., Claremont ..	Berkshire.
Hogle, S. B., Violet	Yorkshire.	Mitton, W. J., Thamesville ..	Yorkshire.
Howden, J. D. & Son, Whitby	Yorkshire.	Minor, C. E. & N. J., Union ..	C. White.
Hooley, Langdon, Powle's Corners	Yorkshire.	Morgan, L. E., Milliken	Berkshire.
Horn, Norman, Baldwin's Mills, Que.	Yorkshire.	Morrow, R. O., Hilton	Tamworth.
Holden, B. F., Indian Head, Sask.	Berkshire.	Mortson, W. H. & Son, Brandon, Man.	Yorkshire.
Howe, Wm., North Bruce	Berkshire.	Moore, Chas., Scotch Lake, N. B.	C. White.
Hopkins, Dr. A. G., Neepawa, Man.	Yorkshire.	Morrison, A. & J., Homewood, Man.	Berkshire.
Hume, A. & Co., Menie	Yorkshire.	Murdock, Wm., Palmerston ..	Yorkshire.
Hurley, J. M., Belleville	Yorkshire.	Muma, G. B., Ayr	Yorkshire.
Hunt & Johnston, Austin, Minn.	Yorkshire.	McAvoy, C. C., Atha	Berkshire.
Hulet, Alf. E., Norwich	Grade.	McLathia, I. H., Gatineau Point, Que.	Yorkshire.
Hunter, J. A., Holley Park ..	Berkshire.	McPhail, R. A., New Haven, P. E. I.	Berkshire.
Hubbard & Simpson, Poplar Point, Man.	Berkshire.	McCallum, Thos., Sperling, Man.	Berkshire.
Hurdman, W. B., Hurdman's Bridge	Yorkshire.	McKay, W., Underwood	Berkshire.
Isaac, D. N., Souris, Man.	Berkshire.	McNally, W. J., Elmwood	Berkshire.
Irwin, A. & Son, Stonewall, Man.	Berkshire.	McKay, J. F., Park Hill	Yorkshire.
Irving, Geo., Point aux Trembles, Que.	Yorkshire.	McEwen, Jas., Kertch	Berkshire.
James, W. & Son, Rosser, Man.	Yorkshire.	McEwen, Jas., Minnedosa, Man.	Yorkshire.
Jackson, John, Abingdon	Yorkshire.	McLennan, H. J., Walter's Falls	Berkshire.
Jackson, Richard, Alma	Yorkshire.	McNeil, R. J., Tatehurst, Que.	Yorkshire.
Jennings, Henry, Tottenham ..	Yorkshire.	McLeod, John, Milton West ..	Berkshire.
Jeffs, E. & Son, Bond Head ..	Berkshire.	McGill, J. A., Neepawa, Man.	Berkshire.
Jones, Wm., Zenda	Yorkshire.	McMillan, Dugald A., Kirkhill	Yorkshire.
Johnson, Wm., Delta	Berkshire.	McDairmid, H. S., Fingal	Yorkshire.
Kay, W. F., Phillipsburg, Que.	Yorkshire.	McGillivray, J. A., Bedford Park	Yorkshire.
Kelly, John, Shakespeare	Berkshire.	McIntosh, C. W., Lacombe, Alta.	Yorkshire.
Kerr, R. J., Mimosa	Berkshire.	McNish, W. H. & A. H., Lyn	Tamworth.
Kerbyson, J. E., Fairfax, Man.	Yorkshire.	McLoughry, H. D., Markdale ..	Berkshire.
Kent, W. C., Moose Jaw, Sask.	Tamworth.	McColl, J. B., Cobourg	Berkshire.
Kean & Son, J., Orillia	Yorkshire.	McConnell, W. H., Aylmer	Yorkshire.
King, P. & G., Oakwood	Yorkshire.	Newson, Alex., Peepabun	Yorkshire.
King Bros., Wawanessa, Man.	Yorkshire.	Nichol, J. C., Hubrey	Tamworth.
Knight, Ranson & Skinner, Ransomville, N.Y.	Yorkshire.	Nixon, W. M., Richmond West	Berkshire.
Koelln, Herman, Glen Allan	Yorkshire and Berkshire.	Ontario Agricultural College, Guelph	Berkshire.
Lahmer, John, Vine	Berkshire.	Oium, H., Edensville, Alta. P. China.	Yorkshire and Tamworth.
Lawrence, J., Oxford Centre	Berkshire.	Patterson, Wm., Churchill	Berkshire.
Lee & Son, J., Dunham, Que.	Berkshire.	Playfair, Geo., Jr., Baldur, Man.	Yorkshire.
Leeson, D., Copenhagen	Berkshire.	Plaunt, X., Northcote	Berkshire.
Lee, J. W., Simcoe	Yorkshire.	Paige, Geo. W., Coatcook, Quebec	C. White.
Lennox, W. J., Newton Robinson	Yorkshire.	Park, Duncan, Fleming, Assa.	Berkshire.
Lester, H., Burford	Yorkshire.	Paterson, Jas. A., Rosebank, Man.	Berkshire.
Legge, Aaron, Minto, N. Dak.	Berkshire.	Parkin, F. & G., Oxford Centre	Berkshire.
Lemaistre, J. C., Peribonca, Que.	Yorkshire.	Parlee, M. H., Sussex, N.B.	Yorkshire.
Lefavre, P. M., Vankleek Hill	Berkshire.	Pangman, W. H., Udora	Yorkshire.
Lemon, S., Kettleby	Berkshire.	Page, J. A., Tyreconnell	Berkshire.
Little, Thos., Kirkwall	Yorkshire.	Penson, E. J., Melita, Man.	Yorkshire.
Linton, Wm., Aurora	Yorkshire.		
Licht, Jno. B., Nithburg	Yorkshire.		
Lloyd-Jones, John, Burford ..	Yorkshire.		
Lloyd, Jas. H., St. Lin, Que.	Yorkshire.		

MEMBERS OF DOMINION SWINE BREEDERS' ASSOCIATION FOR
1905-1906. — *Concluded.*

Name and Address.	Breed.	Name and Address.	Breed.
Pearson, S. J., & Son, Meadowdale	Berkshire.	Siprell & Carroll, Carlholme	Berkshire.
Pritchard, R. J., Roland, Man.	Berkshire.	Smith, Wm., Columbus	Yorkshire.
Pritchard, D., Holmfield, Man.	Berkshire.	Strigley, John Allandale	Berkshire.
Pomeroy, W. J., Belmonte ..	Yorkshire.	Swift Bros., Clover Bar, Alta.	Berkshire.
Potter, A. B., Montgomery, Assa.	Yorkshire and Berkshire.	Shields, W. A., Milton	Berkshire.
Provincial Farm, Charlotte-town, P.E.I.	Yorkshire.	Scassons, John, South March ..	Berkshire.
Pollock, Wesley, Pine River ..	Yorkshire.	Smith, Geo. M., Haysville ..	Yorkshire.
Pound & Co., L. L., Glen Colin ..	Berkshire.	Schmidt, A. D., Elmira	Yorkshire.
Quinn, J. M., Carleton Place ..	Yorkshire.	Smith, A. W., Maple Lodge ..	Yorkshire.
Ratz, A. E., Tavistock	Berkshire.	Scott, Robt., Souris, Man.	Yorkshire.
Rankin, W. R., Demorestville ..	Berkshire.	Stockton, H. M., Redgrave, B.C.	Yorkshire.
Raines, Hunter, Saintfield ..	Berkshire.	F. W. Stone Stock Co., Guelph ..	Berkshire.
Reid, R. & Co., Hintonburg ..	Tamworth and Berkshire.	Snowden, Sam'l, Bowmanville ..	Berkshire.
Rettie, Jas., Norwich	Yorkshire.	Somerville, P. E., Forest	Berkshire.
Reed, Isaac, Ardrea	Berkshire.	Scott, John, Morden, Man.	Berkshire.
Reed, A. T., Orillia	Berkshire.	Snowden Bros., Bayfield	Berkshire.
Rickert, C. B., Mannheim	Berkshire.	Shore, A. L., Roland, Man.	Berkshire.
Richardson, J. A., South March	Tamworth.	Stuart, H., Burford	Yorkshire.
Richardson, J. M., Lawville ..	Yorkshire.	Squire, John, Oxley	Berkshire.
Rigley & Johnston, Headingly, Man.	Yorkshire.	Taylor, Robt., Goodwood ..	Yorkshire.
Riley, Jas. J., Graham, Que.	Yorkshire.	Trann, W. L., Crystal City, Man.	Tamworth.
Ross, A. W., Bromley	Yorkshire.	Tran, W. H., Cedar Grove ..	Yorkshire.
Rogers, L., Weston	Yorkshire.	Tran, Geo. J., Mongolia	Yorkshire.
Rogers, C. P., Woodstock, N.B.	Yorkshire.	Teasdale, Thos., Concord	Berkshire.
Ross, H. H., Burford	Yorkshire.	Thompson, J. T., Sardis, B.C.	Yorkshire.
Roxley, John W., Manitou, Man.	Yorkshire.	Thompson, Irwin, Salmon-dale, N.B.	Yorkshire.
Ross, D., Streetsville	Yorkshire.	Todd, John W., Corinth	Berkshire.
Robson, T. W., Manitou, Man.	Yorkshire.	Tomalty, A., Mt. Maple, Que.	Yorkshire.
Robson, F., Mayne Island, B.C.	Berkshire.	Thompson, Douglas, Woodstock	Berkshire.
Roth, Jacob, Haysville	Yorkshire.	Thurston, R. E., Bobcaygeon ..	Yorkshire.
Russell, Jas. A., Precious Corners	Yorkshire.	Vasey, H. M., Ladner, B.C.	Yorkshire.
Rudd, W. J., Eden Mills	Yorkshire.	Vance, R., & Sons, Ida.	Berkshire.
Russell, D. H., Stouffville ..	Berkshire.	Vanderlip, H. M., Cainsville ..	Berkshire.
Straub, A., Elmira	Yorkshire.	Verral, G. W., Toronto	Yorkshire.
Scarf, Thos., & Son, Rocky Saugeen	Yorkshire.	Uglow, Wm., Port Hope	Yorkshire.
Shannon Bros., Cloverdale, B.C.	Berkshire.	Wallace, W. A., Kars	Berkshire.
Shaw, Robt., Brantford	Yorkshire.	Walsh Bros., Babcock Hill, N.Y.	Yorkshire.
Scarf, A., Cumming's Bridge ..	Yorkshire.	Waddell, D., Spurling, Man.	Yorkshire.
Stafford, John & Sons, Crystal, N. Dak.	Yorkshire.	Wade, W. N., & Sons, Ninga, Man.	Yorkshire.
Standish, John E., Rougemont, Que.	C. White.	Walker, W., Steveston, B.C.	Yorkshire.
Scarnon, F. C., Strathcona ..	C. White.	Wheeler, H. D., West Winfield, N.S.	Yorkshire.
Spafford, A. G., Compton, Que.	C. White.	Weir, John, & Son, Northfield Centre	Berkshire.
Stancomb, Jas., Cartwright, Man.	Yorkshire.	Webb, Horatius, Sardis, B.C.	Yorkshire.
Show, D., Bagot, Man.	Berkshire.	Weightman, M. C., Menteith, Man.	Yorkshire.
Stark, Jas., Ashgrove	Yorkshire.	Wheeler, H. S., Fairfax	Berkshire.
Sample, Hugh, Hereward	Yorkshire.	Wetherall, F. S., Cookshire, Que.	P. China.
Snell & Lyons, Snelgrove	Berkshire.	Wiley, Nelson, Wisbeach	Yorkshire.
Stewart, Jas. I., Gladstone, Man.	Yorkshire.	Wright, W. E., Glanworth	C. White.
Stewart, A. M., Dalmeny	Berkshire.	Wilson, J., & Son, Fergus	Yorkshire.
Stewart, David, Carman, Man.	Berkshire.	White, H. J., Elkhorn, Man.	Yorkshire.
Sample, J. R., Brule, N.S.	Yorkshire.	Wilson, Wm., Brampton	Berkshire.
Shepherdson, W. J., Walter's Falls	Berkshire.	Willis, Amos, Gorrie	P. China.
Seabrook, P. R., Komoka	Yorkshire.	Wilson, R. M., Marringhurst, Man.	Berkshire.
Stencer, W. H., Morpeth	Berkshire.	Wylie, Bros., Cardinal	Berkshire.
Smith, W. M., Scotland	P. China.	Wilson, J. J., Milton	Berkshire.
		Wymer, C. C., Waterford	Berkshire.
		Wieg, Wm., Lewisville, Alta.	Berkshire.
		White, Jas., O'Sullivan Corners	Yorkshire.
		Wiggins, Henry, Nottawa	Yorkshire.
		Wood, J., Walter, Clayton, N.Y.	Yorkshire.
		Woodward, F., Fernhill	Yorkshire.
		Yuill, A. R., Carleton Place ..	Berkshire.
		Young, R., Kays, Man.	Berkshire.

Western Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Western Ontario Poultry Association was held in the City Hall, Guelph, at 1.30 p.m., on Thursday, December the 14th, 1905. The President, Wm. McNeil was in the chair.

The minutes of the previous annual meeting were read and adopted.

FINANCIAL STATEMENT FOR THE YEAR ENDING OCTOBER 31ST, 1905.

<i>Receipts.</i>		<i>Expenditures.</i>	
Cash on hand from previous year	\$89 75	Directors' expenses and Secretary's salary	\$218 55
Entry fees	1,449 10	Printing and advertising	86 18
Membership fees	258 00	Judges and Judges' clerks	277 00
Special prizes	390 00	Repairing coops, trucks, etc.	29 25
Protest fee	2 00	Feed for poultry	34 53
Balance due Treasurer	991 51	Prize Ribbons	61 80
		Prizes paid	2,248 00
		General wages	213 95
		Auditor	5 00
		Miscellaneous	6 10
	\$3,180 36		\$3,180 36
Audited and found correct, J. M. DUFF, Auditor.		WM. MCNEIL, President. A. P. WESTERVELT, Treasurer.	

OFFICERS FOR 1906.

<i>Honorary President</i>	F. W. HODSON, Ottawa.
<i>President</i>	WM. MCNEIL, London.
<i>First Vice-President</i>	A. BOGUE, London.
<i>Second Vice-President</i>	W. J. BELL, Angus.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT.
<i>Auditor</i>	J. M. DUFF, Guelph.

Directors:

L. H. BALDWIN, Deer Park; A. W. TYSON, Guelph; G. G. HENDERSON, Hamilton; T. H. SCOTT, St. Thomas; P. GRIER, Owen Sound; R. OKE, London; N. K. CORNWALL, Thamesville; C. H. WILSON, Hawkstone.

Representatives to Fairs:

Toronto Industrial	WM. MCNEIL, London.
Western Fair	J. H. SAUNDERS, London;
	C. A. STEWART, London
Brantford	J. H. MINSHALL, Brantford;
	GEO. COLWELL, Paris Station.
Winter Fair, Guelph	WM. MCNEIL, London;
	A. W. TYSON, Guelph.

any words
of
Mr. J.
superintendent

The following suggestions were then made to the new board regarding classification for 1906:

That classes be provided for Birchen Game Bantams, Rhode Island Reds, African Geese, Peruvian Abyssinian and S. C. Cavies, Black Turbits, Parlor Tumblers, Blue, and Silver Fantails; and that the young bird classes in pigeons be undertaken by the Association.

"That there be a special judge provided for Games and Game Bantams, and that they be judged the first day of the show."

Considerable discussion took place as to the awarding of special prizes, and it was decided on motion of Mr. DONOVAN, seconded by Mr. BARBER, That there should be more notice given to exhibitors of the closing of the date for accepting special prizes, and the following was adopted:—

"That all exhibitors be sent the following notice with acknowledgement of entry fees:

"DEAR SIR,—To compete for special prizes it has been decided that all exhibitors must be subscribers to the special list. If you are not one you may yet compete by sending me, within six days, not less than one dollar in cash as a donation to the fund. This subscription will be placed to the credit of the special fund of the following year, but is in no way to be taken as a subscription to that year."

DIRECTORS' MEETING.

It was moved by A. W. TYSON, seconded by RICHARD OKE, "That the membership fees be paid in to the Winter Fair Board." Carried.

The following classes were added: Rhode Island Reds, Birchen Games, Birchen Game Bantams; also Peruvian, Abyssinian, and S. C. Cavies, to be shown singly with prizes of \$1.25 and 75 cents.

It was decided that the Pigeon Department be allowed an increase of \$50, and the classification of the whole Department be left to Dr. Bell.

It was decided to have a class provided for Guinea fowl, to be shown in pairs, prizes being \$2, \$1 and 50 cents.

It was decided to have the Orpington Class in Dressed Poultry divided into one for cockerels, and one for pullets.

It was decided to have a class added for six Squabs, with \$3, \$2 and \$1 as prizes.

A petition from exhibitors in the Pigeon Department was presented, and it was ordered to be referred to the Winter Fair Board, with the suggestion that Mr. L. C. Sage be appointed superintendent of the Pigeon Department, and that he have nothing else to do but look after this one Department.

It was decided to make the rabbit prizes the same as the pigeon, namely \$1.50 for 1st and \$1 for 2nd.

It was decided to use prize ribbons instead of prize cards in the dressed poultry.

To abolish the scoring of birds, which has been in vogue in the past.

Mr. BALDWIN, seconded by W. J. BELL, "That the suggestion as passed at the annual meeting be adopted, and be changed to suit the particulars of the prize list."

It was recommended to the Winter Fair Board as early as possible for the year of 1906.

MEMBERS OF THE WESTERN ONTARIO POULTRY ASSOCIATION. AND VARIETIES ENTERED WINTER FAIR, 1905.

Name and Address.	Variety.	Name and Address.	Variety.
Andrews, F. A., London	White Plymouth Rocks.	Bogue, G. & J., Strathroy	Black Wyandottes, Dominiques, Javas, Black Sumatra Game, Spanish, Houdans, Creve Couer, La-Fleche, Polands, Red Caps and Sultans, Bantams and Ducks.
Allan, John O., Scotch Line	Buff Leghorns.	Brock, C. W. P., Waterford	S. C. and R. C. Black Minorcas.
Armstrong, Adam A., Fergus	Barred Plymouth Rocks.	Baker Bros., Guelph	Turkeys, Geese, Ducks.
Arthur, Jas., London	Silver Laced Wyandottes.	Barnes, Robt., 41 Colborne street, Toronto	Buff Orpingtons.
Alexander, W. J., Ashgrove,	Plymouth Rocks, Turkeys and Ducks.	Becker, H. F., Waterloo	S. C. Brown Leghorns.
Ayars, O., London	White Wyandottes.	Berner, F., 1218 Dufferin street, Toronto	White Plymouth Rocks.
Aird, P. E., Montreal Annex, Que.	Buff Orpingtons and White Plymouth Rocks.	Boyce, J. B., London	Barred and Buff Plymouth Rocks.
Armstrong, W. W., Queenston	Buff Orpingtons.	Bessey, W. H., Coleman	White Plymouth Rocks.
Asman, Geo., J., 905 Vermont ave., Detroit, Mich.	Pigeons.	Belford, John A., Ottawa	Light Brahmas.
Balfour, Jas. R., Morrisburg	Barred Plymouth Rocks.	Bromley, Walter, Youville, Que.	White Plymouth Rocks, Buff Orpingtons.
Bush, Wm. H., St. Thomas	W.C.B. Polands.	Black, G. A., Guelph	White Wyandottes.
Brown, C. P., Colborne	Light Brahmas.	Burn, M. T., & Son, Tilsonburg	Dominiques, Games, Polands, Red Caps, Silkies, Game Bantams, Geese, Ducks.
Butler, Walter H., London	Black Red Games.	Barber, Oswald J., Guelph	Game.
Bell, F., 400 Crawford street, Toronto	Pigeons.	Cuddeford, E. J., Kingston	White and Barred Plymouth Rocks, S. C. White and Black Leghorns, Sebright Bantams, Pheasants.
Beattie, W. H., Wilton Grove,	Turkeys.	Charlton, V. & E., Ilderton	Houdans.
Bawden, John, Ridgetown	Buff Plymouth Rocks.	Crowie, W. H., Niagara Falls, N.Y.	Game Bantams.
Bartlett, Rev. S. T., Colborne	Buff Wyandottes, Buff Cochins Bantams.	Coulter, Dan., St. Thomas	Barred Plymouth Rocks.
Barker, R. K., 23 Scott street, Toronto	Pigeons.	Crowe, C. R., Guelph	Black Red Game, Game Bantams.
Baptie, Jas., Springville	G. S. Hamburgs.	Carswell, E. A., Grafton	Andalusians.
Bunker, A., 190 Concord ave., Toronto	Pigeons.	Coates, Dr. E. C., Thamesville	S. C. White Leghorns.
Bedford, J., 25 Hunter street, Toronto	Barred Plymouth Rocks.	Cornwall, N. K., Thamesville	Buff Leghorns.
Boulton, Alf., 27 Isabella st., Toronto	Buff Orpingtons.	Conley, T. J., St. Mary's	R. C. Brown Leghorns.
Bell, W. J., Angus	Turkeys and R. C. White Leghorns.	Coates, Robt., London	S. C. Black Minorcas.
Barber, Wm., 242 Queen st. west, Toronto	Games and Game Bantams.	Chinnick, F., Napanee	Orpingtons.
Barton, A. W., 124 North Beaconsfield ave., Toronto	Pigeons.	Coulter, John, 237 Bain ave., Toronto	White Wyandottes.
Brill, L. A., London	Black Minorcas, Buff Cochins, Golden Sebright and Black African Bantams.	Currier, C. H., 196 Shaw street, Toronto	Pigeons.
Baldwin, L. H., Deer Park	White Wyandottes.	Clark, H. H., Lennoxville, Que.	Buff Leghorns, Light Brahmas.
Blythe, C. M., Marden	S. C. White Leghorns, Buff Orpingtons, G. Sebright Bantams and Embden Geese.	Cameron, J., Brantford	Buff Orpingtons.
Berner, G., 345 Shaw street, Toronto	Buff Leghorns.	Clark, J. W., Cainsville	Wyandottes.
Brown, A. G., Watford	White Plymouth Rocks.	Cale, E. B., Stratford	Plymouth Rocks.
Bogue, Allan, London	Dorkings, Houdans, Polands and Ducks.	Colling, T. B., Exeter	R. C. Brown Leghorns, S. S. Hamburgs.
Bradley, John, Milton	S. C. Brown Leghorns.	Cadman, Wm., St. Thomas	White Wyandottes, Duckwing Game, Geese, Ducks.
Barber, Victor, 455 Ontario street, Toronto	Game Bantams.		

MEMBERS OF WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED.—Continued.

Name and Address.	Variety.	Name and Address.	Variety.
Culbert, O. E., Ottawa	White Wyandottes.	Goldie, Roswell, Guelph	Silver Grey Dorkings, Pheasants and Ducks.
Cosh, Newton, Port Dover	Andalusians, Barred Plymouth Rocks.		
Carroll, J. A., St. James Park, London	White Plymouth Rocks, White Wyandottes, Game.	Graham, A. W., St. Thomas	Golden Laced and Buff Wyandottes.
Carbert (M.D.), B., Campbellville	Dominiques.	Corvett, Charles, Sparta	S. C. Black Minorcas, Andalusians.
Darness, C. J., 196 River St., Toronto	White Wyandottes, Black Javas, Black Sumatra Game, S. C. White Leghorns, Buff. Black and A. O. C. Orpingtons, Red Caps & Silkies.	Glanville, L., London	Buff and Black Cochins.
Dunne, Henry, 1492 Queen street west, Toronto	S. C. Black Minorcas.	Grier & Pratt, Owen Sound	S. C. White Leghorns.
Davidson, Miss Elsie, Collingwood	Ducks, Guineaes.	Graham, Rev. A., Parkhill	Partridge Wyandottes, S. C. White Leghorns.
Dundas, Jas., Deer Park	Buff Wyandottes; Buff Leghorns; Buff Orpingtons.	Golding, H., Ingersoll	Wyandottes.
Degroff, Geo., Napanee	White Wyandottes; Houdans.	Glen, Alf., Chatham	Pigeons.
Dean, Elston, Owen Sound	Buff Orpingtons.	Gunning, John, Sherbrooke, Que.	Andalusians.
Dean, A. E., Watford	Black Leghorns; Black Orpingtons.	Houston, R., Dixie	Plymouth Rocks, Wyandottes, Minorcas, Buff Orpingtons.
Doidge & McNeil, London	Bantams.	Hussey, J. E., Melbourne	Leghorns.
Dewar Bros., Milton	R. C. and S. C. Brown Leghorns; Bantams.	Harrow, J. A., Crosshill	Buff Plymouth Rocks.
Doubt, Wm., Columbus	Indian Game; Black Orpingtons.	Hoggarth, Wm. E., Hensall	S. C. White Leghorns.
Donovan, H. B., 124 Victoria street, Toronto	Silkies; Bantams.	Hatton, J. A., London	Pigeons, Bantams.
Dawson, W., Davisville	White Wyandottes; A. O. V. Fowls.	Hodgens, Wm. T., London	R. C. Black Minorcas.
Daley, Peter, Seaforth	Golden Laced Wyandottes.	Hoover, M. R., Locust Hill	Barred Plymouth Rocks, Buff Wyandottes, R. C. White, and S. C. Brown Leghorns.
Daly & Dill, Seaforth	Plymouth Rocks; Wyandottes.	Hamilton, Jas. E., London	White Plymouth Rocks, Black Orpingtons.
Elliott, And., Pond Mills	Turkeys.	Hoffman, H. A., Ridgetown	Buff, Black and A. O. C. Orpingtons.
Ellis, Wm., Prescott	S. C. Black Minorcas.	Holmes, Wm., Amherst, N.S.	Barred Plymouth Rocks, White Plymouth Rocks, White Wyandottes, Silver Laced Wyandottes, Silver Buff Dorkings, Buff Orpingtons.
Eidt, E. H., Stratford	White Wyandottes.	Henderson, H., Dunham, Que.	Barred Plymouth Rocks, S. C. Brown Leghorns.
Elliott, Geo., Welland	White Wyandottes.	Hamilton, Geo. O., Fergus	Black and Buff Wyandottes.
Fraleigh, E., St. Mary's	Buff Orpingtons.	Herner, M. C., Mannheim	Barred Plymouth Rocks.
Fox, Wm., 597 King street west, Toronto	Hares; Rabbits.	Howard, W., Guelph	White Wyandottes, Bantams.
Frith, E. R., Maxville	S. C. Black Minorcas; Pigeons.	Henry, Robt., Guelph	Pigeons.
Foster, Jos., Brampton	White Plymouth Rocks; Bantams.	Henderson, G. G., Hamilton	S. C. Brown Leghorns.
Flawn, Alf., London	Silver Laced & Partridge Wyandottes.	Howard & Middlebrook, Guelph	White Wyandottes, Andalusians.
Fullerton, W. J., 1545 Queen street east, Toronto	S. C. White Leghorns.	Hammall, Wm., 667 King St. west, Toronto	Game Bantams, Pigeons.
Fairley, W. H., Guelph	S. C. Black Minorcas; White Wyandottes; Bantams.	Handley, John, Galt	Indian Game.
Furminger, S. D., St. Catharines	Silver Gray Dorkings; Bantams; Ducks.	Hockin, Chas., London	Barred Plymouth Rocks.
Faulds, T. A., London	Barred Plymouth Rocks, S. C. Black Minorcas.	Henderson & Billings, St. Mary's	S. Laced Wyandottes, R. C. Brown Leghorns.
Finn, Thos., 30 Melville ave., Toronto	Game and R.C. White Leghorns, Pigeons.	Hodgkin, F. W., Guelph	Black Leghorns, Barred Rocks, Canaries.
Frith, S. W. D., Winchester	Black Orpingtons.		
Grieve, G. Wilson, Parkhill	White Wyandottes.		
Graham, R. & L., O.A.C., Guelph	Bantams.		

MEMBERS OF WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED.—Continued.

Name and Address.	Variety.	Name and Address.	Variety.
Hart & Grimoldby, Owen Sound	Pyle Game Bantams.	Martin, John S., Port Dover	White Wyandottes.
Henderson, J. S., Rockton	Turkeys.	Massie, Chas., Port Hope	White Wyandottes, Buff Orpingtons, Pigeons.
Number Hill Poultry Farm, Mount Dennis.	Buff Orpingtons.	Morrow & Rice, Bowmanville	S. C. White Leghorns, Spanish.
Hahoran, J., Brantford	S. C. White Leghorns.	Murdie, R. G., Seaforth	Pekin Ducks, Bronze Turkeys.
Hastings Bros., Crosshill	Plymouth Rocks.	McGlennen, Wallace, Colborne	S. Grey Dorkings.
Irwin, Geo. W., Seaforth	Dark Brahmas, Buff Cochings, Polands and Bantams.	McKee, John, Norwich	S. Grey Dorkings.
Isbell, J. T., 309 Sumach St., Toronto	Pigeons.	McNeil, Wm., London	Polands, Hamburgs, Silkies, Bantams.
Irwin, Jas. A., London	R. C. Brown Leghorns.	McDonell, John, Brantford	Light Brahmas.
Jefferies, Edward, 244 Bain avenue, Toronto	Buff Leghorns.	McKinstry, R. E., Ottawa	Pigeons.
Jones, W. A., 142 Tecumseh street, Toronto	Pigeons.	McNiven, Fred, Guelph	R. C. White Leghorns.
Krouse, F. W., Guelph	Barred Plymouth Rocks, Silver Laced Wyandottes, Partridge Wyandottes, Javas, Black Orpingtons, Ducks.	McCue, D. J., London	White Wyandottes.
Kemp, R. W., London, Ont.	Black Orpingtons.	McMaster, W. A., Guelph	Fowls.
Karn, J. H., Guelph	Pigeons	McInnis, G. A., Prescott	S. C. Black Minorcas, R. C. Brown Leghorns, Bantams.
Knight, I. T., Guelph	Langshans, Barred Plymouth Rocks, Black Wyandottes, Andalusians, Ducks.	McDougall, A., Milton	Turkeys, Geese and Ducks.
King, Fred D., Aylmer West	Game, Spanish, Creve Coeurs, Bantams.	McDonnell, F. P., Watford	Black Wyandottes, R. C. Black Minorcas.
Kettlewell, N. T., London	White Wyandottes.	McCormack, W. J., 536 Yonge street, Toronto	Pigeons.
Lampman, J. H., Palmyra	Orpingtons.	McGregor, Hugh, Caledonia	Buff Orpingtons.
Landsborough, Wm. A., Acton	White Wyandottes.	McCurdy, E., London	Black Langshans.
Luxton, A. G. H., Milton West	Dorkings, Turkeys, Geese, Ducks.	McCormack, Jas. M., Brockton	Dorkings, Game Bantams, Geese, Ducks.
Lemon, Wilber, Lynden	Wyandottes, Leghorns.	McLoud, Mm., London	Barred Plymouth Rocks
Laidlaw, J. R., Paisley	S. C. White Leghorns.	Nixon, J. W., & Topping Co., Woodbank	Dark Brahmas, Cochins, Wyandottes, Game.
LaRose, Chas., Cornwall	Indian Game, Andalusians, Hamburgs, Bantams.	Niven, J. S., London	Buff Orpingtons, Ducks.
Lockwood, Warren, Melbourne	Black Leghorns, S. C. Brown Leghorns.	Nantel, W. B., St. Jerome, Que.	Light and Dark Brahmas, Cochins, Polands, Turkeys, Spanish.
Morris, Theodore, 111 Walton street, Toronto	Silkies and Bantams.	Oakley, Wm., Rosedale Lacrosse Grounds, Toronto ..	Barred Plymouth Rocks.
Millard, R. B., London	Black Cochins.	Osborne, W. M., Brookville	Black Leghorns, White Minorcas.
Marr, Dr. D., Ridgetown	Barred Plymouth Rocks.	Oke, Richard, London	Partridge Cochins, Javas, White Leghorns, Creve Coeurs, Hamburgs, Sultans, L. F. Bantams.
Mounce, J. E., Guelph	Barred Plymouth Rocks, Toulouse Geese.	Packham, C. J., Brampton	Buff Wyandottes.
Millar, A. C., Brockville	Light Brahmas.	Pickering, E. A., Willowdale	White Wyandottes.
Munroe, G. E., Forest	White Plymouth Rocks.	Pranschke, W. O., Ottawa East	Columbian Wyandottes.
Midwinter, C., Louise Bridge, Man.	Geese.	Player, W. J., Galt	S. C. Brown Leghorns.
Meyer, J. E., Gourock	Wyandottes and Orpingtons.	Poole, Geo., Guelph	White Wyandottes.
Minshall, J. H., Brantford	Black Minorcas, White Wyandottes.	Pringle, John, London	Barred Plymouth Rocks.
Mitchell, Douglas, Guelph	Rabbits and Hares.	Postlethwaite, James, Goderich	Golden Laced Wyandottes, Black Leghorns.
Magill, John H., Port Hope	Golden Laced Wyandottes, Pigeons.	Philpot, Jas., & Son, Guelph	Langshans, Games, Bantams.
Millard, I. K., Dundas	Barred Plymouth Rocks.	Quenbury, J. C., Port Dover	Orpingtons.
		Rosser, Harold H., 60 Olose avenue, Toronto	Buff Cochins, Bantams.

MEMBERS OF WESTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES ENTERED.—Concluded.

Name and Address.	Variety.	Name and Address.	Variety.
Rundie, S., Guelph	White Wyandottes.	Shaw, John M., Forest	Fowls.
Reid, W. H., Kingston	Wyandottes, Javas, Games, Houdans, Bantams, Pigeons.	Sherlock, Thos., London	Pyle Game.
Rawlings, E. A., Forest	S. C. Black Minorcas, Black Orpingtons.	Sheward, J. A., Guelph	Dressed Poultry and Pigeons.
Ruby, H. S., & Son, Midland	Leghorns, Spanish, Houdans, Plymouth Rocks.	Thompson, T. A., Marmora..	S. C. Brown Leghorns.
Rogers, R., Hamilton	Buff Cochins Bantams.	Tyson & McMaster, Guelph..	Brown Red Game, Pyle Game, Pyle Game Bantams.
Rock Bros., Prescott	Bantams.	Thompson, W. J., Guelph....	S. C. Brown Leghorns.
Rae, Joseph, Port Hope	White Wyandottes.	Telfer Bros., Wilton West....	Geese, Games, Turkeys.
Readwin, A. & T., Guelph ..	Brahmas, Cochins, Barred Plymouth Rocks, Wyandottes, Leghorns, Minorcas, Pigeons, Ducks.	Tedford, David, Blenheim..	Buff Plymouth Rocks, Game.
Robertson, Geo. A., St. Catharines	White Plymouth Rocks, White Wyandottes, Pigeons.	Teale, W. J., Guelph	Langshans, Game, Si kies, Bantams, Pigeons, Ducks.
Ridder, L., Guelph	Pigeons.	Tossy, Geo. A., Hamilton....	Light Brahmas.
Raymo, Walton E., Waterloo	Bantams.	Trew, D. C., Lindsay	Houdans.
Richardson, Chas., Gourock	Andalusians.	Tilt, C. A. E., Doon	Dark Brahmas, Black Langshans, Buff Cochins Bantams, Geese and Ducks.
Roberts, John W., St. Thomas	Black Red Game.	Tomalin, Joseph, Toronto....	Dressed Poultry.
Scott, Ashton Co., Morrisburg	Dressed Poultry.	Ubelacker, F., Stratford	Light Brahmas.
Scanlon Bros., Ennotville ..	Geese, Ducks.	Wells, E., Jr., London	Red Caps.
Sage, L. C., London	Dark Brahmas, Partridge, Wyandottes.	Wright, John H., Oakville..	Black Langshans.
Snyder, Elias, Burgessville..	Barred Plymouth Rocks.	Wilson, Matt, Fergus	Barred Plymouth Rocks.
Smith, John, Villa Nova....	Aylesbury Ducks.	Wilson, Wm. C., & Sons, Hawkestone	Leghorns, Houdans, Bantams.
Slessor & McCracken, London	Bantams.	Wright, W. E., Glanworth....	Turkeys.
Scott, T. H., St. Thomas	Wyandottes, Indian Runner Ducks.	Walker, Wm. E., Guelph....	Pyle Game Bantams.
Smiley, S. H., St. Thomas..	White Wyandottes, Fowls.	Wilson, Wm., Guelph	White Wyandottes.
Stevenson, W., Woodstock..	Bantams.	Wyatt, Hugh, London	Buff Cochins.
Spry & Mick, 77 McKenzie crescent, Toronto	Buff Wyandottes.	Wales, F., Milton	Partridge Cochins, R. C. White Leghorns, Toulouse Geese.
Smith, Lew, Milton	White Wyandottes.	Worthy, Jos. A., 58 Smith street, Toronto	Pigeons.
Spiera Bros., Guelph	Bantams.	Warrington, J. H., Cornwall	Spanish, Dorkings, Creve Coeurs, Red Caps, La-Fleche and Silkies.
Stroh, M. H., Waterloo	Black Orpingtons	White, Geo. J., Hamilton....	Bantams, Pigeons.
Scott, Peter, Guelph	S. C. Brown Leghorns.	Worth, W., St. Thomas	R. C. Black Minorcas.
Sherrick, Caleb, 373 Lincoln avenue, Detroit, Mich....	White Plymouth Rocks.	Wallace, H. H., London	White Plymouth Rocks, Geese
Steffler, C. J., & Burns, Guelph	White Leghorns, Pigeons.	Wilson, E. J., Oshawa	Silver Grey Dorkings.
Sholdice & Sage, London	White Plymouth Rocks.	Westbury, Frank, London....	Barred and White Plymouth Rocks.
Shea, Thos. M., Fergus	Geese and Ducks.	Woodward, F. A., 2 Churchill avenue, Toronto	Pigeons.
Schlueter, G. A., Preston	Silver Grey Dorkings, Buff Orpingtons, Barred Plymouth Rocks, R. C. Brown Leghorns.	Wright Bros., Brockville....	White Wyandottes.
Smith & Browne, Columbus.	Plymouth Rocks, Houdans, Ducks.	Willis Bros., Seaforth	White Plymouth Rocks.
Swaffield, J. B., Union	Pyle Game.	Woodrow, H. J., & Son, Beaconsfield	Plymouth Rocks, Andalusians, Leghorns, Orpingtons.
Schelly, S. J., Brantford	White Plymouth Rocks.	Wood, Geo., Louise Bridge, Winnipeg, Man.	Leghorns
Smith, W. M., Scotland	Turkeys, Geese, Ducks.	Wray, F. E., London	Barred Plymouth Rocks.

Eastern Ontario Poultry Association.

ANNUAL MEETING.

The annual meeting of the Eastern Ontario Poultry Association was held in the Imperial Building, Ottawa, on Thursday, March 8th, 1906, the Vice-President, Mr. Geo. Higman, in the chair.

It was moved by F. WALES, seconded by A. W. E. HELLYER, "That the minutes of the last annual meeting, having been published in the last annual report of the Government, be taken as read." Carried.

Moved by J. H. WARRINGTON, seconded by Mr. CARLETON, "That all assets and liabilities of this Association be turned over to the Eastern Ontario Live Stock and Poultry Show." Carried.

Moved by S. SHORT, seconded by J. H. WARRINGTON, "That the financial statement be received and adopted." Carried.

It was suggested to the Board of the Show that classes be provided for Partridge Wyandottes, Buff Orpingtons, White Orpingtons, A.O.V. Orpingtons, and that the A.O.V. French class be made into three classes as follows:—Creve Cours, La Fleche, and Faverolles, and that classes for Partridge Cochin Bantams and Indian Runner Ducks be provided.

In the pigeon classes, the class for Runts was struck off, and the three Barb classes made to read, "Barb, any Color," and it was suggested that there be one class for English Owls, and that the Turbit class be made into three classes as follows:—Black, Blue, and A.O.C., and that there be added two classes of Flying Homers, namely, Blue and A.O.C.

It was suggested that in the Selling Class, Brahmas, Rhode Island Reds, Hamburgs, and French be added; also in the Dressed Poultry that two classes be provided for Rhode Island Reds and French.

On motion it was resolved that the judges of this year be re-appointed for the next show.

Moved by S. SHORT, seconded by F. H. GISBORNE, "That no names be allowed on the entry cards in the Dressed Poultry Department, until after the judging is completed, and that an official of the Association be appointed to place the dressed poultry." Carried.

Moved by S. SHORT, seconded by WM. MCNEIL, "That the entries in all the poultry departments close at least 12 days before the opening of the show." Carried.

Moved by J. H. WARRINGTON, seconded by S. SHORT, "That the next show be held at least one month earlier than the present one." Carried.

OFFICERS FOR 1906.

<i>Honorary President</i>	LORD AYLMER, Ottawa.
<i>President</i>	J. A. BELFORD, Ottawa.
<i>First Vice-President</i>	GEO. HIGMAN, Ottawa.
<i>Second Vice-President</i>	W. H. REID, Kingston.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT, Toronto.

Directors:

J. H. WARRINGTON, Cornwall; F. J. BLAKE, Almonte; W. M. OSBORNE, Brockville;
S. SHORT, Ottawa; W. F. GARLAND, Hintonburg; A. W. E. HELLYER, Ottawa; C.
J. DANIELS, Toronto.

<i>Delegates to Toronto Exhibition</i>	C. J. DANIELS, Toronto; A. G. GILBERT, Ottawa.
<i>Delegates to Ottawa Exhibition</i>	LORD AYLMER, Ottawa; J. A. BELFORD, Ottawa.
<i>Eastern Ontario Live Stock and Poultry Show</i>	J. A. BELFORD, Ottawa; W. F. GARLAND, Hintonburg; GEO. HIGMAN, Ottawa.
<i>Superintendent</i>	R. E. MCKINSTREY, Ottawa.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31st, 1905.

<i>Receipts.</i>		<i>Expenditures.</i>	
Cash on hand from previous year, as per last report ...	\$332 81	Cash paid for prizes	\$1,379 00
Membership fees	102 00	Sales in "Selling Class"	79 50
Entry fees	466 90	Judges and judges' clerks ...	227 00
Interest	2 37	Express	8 75
Dominion Government grant...	42 00	Office work	33 00
Sales in "Selling Class"	79 50	Insurance on coops	6 20
		Feed for poultry	22 95
		Auditor	5 00
		Interest on overdraft	22 07
Total	\$1,025 58	Total	\$1,783 47
Examined and found correct, this 30th day of January, 1906. (Signed) J. M. DUFF, Auditor.		Balance due Treasurer	757 89
		JOHN A. BELFORD, President. A. P. WESTERVELT, Sec.-Treasurer.	

MEMBERS EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES EXHIBITED AT EASTERN ONTARIO LIVE STOCK AND POULTRY SHOW, 1906.

Name and Address.	Variety.	Name and Address.	Variety.
Armstrong, A. A. Fergus...	Barred Plymouth Rocks, E. C. Leghorns.	Beckstead, F. W., Morrisburg	Barred Plymouth Rocks.
Arnold, Wm., Ottawa		Belanger, J. F., Ottawa...	S. C. White Leghorns.
Lord Aylmer, Ottawa		Bogue, G. & J., Strathroy..	Wyandottes, Javas, Game, Spanish, Red Caps, Dorkings, Houdans, Polands, Bantams, Ducks.
Anderson, Rev. G., Morrisburg	Barred Plymouth Rocks, White Wyandottes, S.C. White and Buff Leghorns, Black Minorcas.	Bryce, Albert, Toronto	Light Brahmas.
Allan, John O., Scotch Line	S. C. Buff Leghorns.	Crouch, Thos. S., Billing's Bridge	S. C. White Leghorns.
Allan, J. S., Ottawa	White and Buff Orpingtons.	Cumming, D., Russell	Buff Plymouth Rocks, C. Indian Game, S. C. Brown Leghorns, Bronze Turkeys, White Turkeys, Toulouse Geese, Rouen and Pekin Ducks.
Annand, W. J., Ottawa	White Wyandottes, Orpingtons.	Collins, F. H. A., Ottawa	S. C. Brown Leghorns.
Byshe, Herbert, Ottawa	White Leghorns.	Carswell, W. P., Brockville..	S. C. White Leghorns, Andalusians, Black Minorcas.
Blackely, R. E., Ottawa	Buff Wyandottes.	Craig, Geo. E., Ottawa	White Plymouth Rocks.
Benjamin, E. H., Ottawa	Old Eng. or Pit Game.	Carleton, W. H., Ottawa	S. C. White Leghorns.
Belford, John A., Ottawa...	Light Brahmas.	Delary, Wm., Ottawa	Silver Wyandottes.
Bradley, Geo. R., Carsonby..	Bronze Turkeys.	Dynes, Alex., Ottawa	Light Brahmas, Barred Plymouth Rocks, Silver Wyandottes.
Burrnont Pigeon Lofts, Hintonburg	Tumblers, Trumpeters, Jacobins, White Fantails, Magpies, Show Homers.		
Bromley, Walter, Youville, Que.	White Plymouth Rocks.		
Barber, Wm., 242 Queen St. W., Toronto	B. B. Red, Brown Red, Duckwing, Pile Game Bantams.		

MEMBERS OF EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES EXHIBITED.—Continued.

Name and Address.	Variety.	Name and Address.	Variety.
Doidge & McNeil, London	Buff, White and A.O.V. Cochins.	Montgomery, W. L., Gravel Hill	Silver Wyandottes, S. C. Brown Leg-horns, Black Minorcas, A.O.V. Orpingtons.
Depres, A. C., Hull, Que.	S. C. Buff Leg-horns, White Cochins Bantams.	Matheson, G. M., Ottawa	Partridge Wyandottes.
Dier, W. A., Ottawa	White Wyandottes.	McGurran, Jas., Ottawa	S. C. White Leg-horns.
Donovan, H. B., 124 Victoria street, Toronto	A.O.V. Game Bantams.	McCurdy, R., London	Langshans.
Emmett, Geo., Morrisburg	Light Brahmas, Buff Cochins, White and Buff Plymouth Rocks, A.O.V. Orpingtons.	McCorkhill, Harry, Billing's Bridge	L. F. Clean Leg Tumbler, S. F. Clean Leg Tumbler, Archangel, A.O.S. Variety.
Ellis, Wm., Prescott	Black Minorcas.	McKellar, Donald, Hawkes-bury	S. C. White Leg-horns.
Fidler, J. E., Brockville	Barred Plymouth Rocks.	Neate, M. C., Ottawa	Barred Plymouth Rocks.
Frith, E. B., Maxville	Old Eng. or Pit Game, Black Minorcas, B.R.C.'b Bantams.	Nantel, W. B., St. Jerome, Que.	Brahmas, Cochins, Spanish and Poland, Geese.
Fallis, R., Ottawa	White Wyandottes.	Norrie, J. D., Marmora	Barred Plymouth Rocks, Leghorns, Minorcas.
Gurney & McCue, London	S. C. Brown Leg-horns, White Wyandottes.	Ottawa Poultry Yards, Ot-tawa	Barred and Buff Plymouth Rocks, Rhode Island Reds, Black Minorcas, Bantams, Pigeons.
Guy, G. F., Ottawa	Light Brahmas, S. C. Brown Leghorns.	Osborne, W. M., Brockville	Leghorns and Minorcas.
Grant, John, Rockland	S. C. White Leg-horns.	Oke, R., London	Cochins, Javas, Game, Leghorns, Hamburg and Bantams, French.
Garland & Gilchrist, Hinton-burg	Langshans, Barred and Buff Plymouth Rocks, Silver Wyandottes, Black Minorcas.	Pritchard, Dr., North Wake-feld	Light Brahmas, Buff Cochins, Langshans, C. Indian Game.
Gromoll, E., Ottawa	Minorcas.	Player, W. J., Galt	S. C. Brown Leg-horns.
Gibson, R. E., Morrisburg	Barred Plymouth Rocks, Buff Orpingtons.	Pranschke, W. C., Ottawa	Wyandottes, S. C. White Leghorns.
Hellyer, A. W. E., Ottawa	Buff Orpingtons.	Plante, W., Ottawa	Bantams and Pigeons, Hamburgs.
Higman, Stanley, Ottawa	Black, Yellow and Red Magpies, Turbit.	Pillar, W., Russell	S. C. Brown and Buff Leghorns, Black Hamburgs.
Hunt, B. J., Ottawa South	White Wyandottes.	Peaker, J. M., Ottawa	Minorcas.
Holbrook, G. A., Ottawa	White Minorcas, Black Hamburgs.	Reid, W. H., Kingston	Wyandottes, Black and Mottled Javas, B. B. Red Game, Pyle and Indian Game, Colored Dork-ings, Houdans, Black Red, Brown Red, Duckwing, Pyle Game Bantams, Sebright and Ornamental Bantams, Carriers, Pouters, Tumblers, Trumpeter, Jacobins, Oriental Frills, Antwerp, Silver Dun, Fantails, Swallows, Arch-angels, Nuns, Owls and Turbits.
Hawley, Geo., Prescott	G. Sebright Bantams.		
Higman, Geo., Ottawa	White Wyandottes, French.		
Homewood Farm, Graham, Que.	Buff Wyandottes, Pekin Ducks.		
Hartnett, M., Ottawa	Dark Brahmas.		
James, F. A., Ottawa	Barred Plymouth Rocks.		
Lake, G., Ottawa	White Wyandottes, White Leghorns.		
LaSalle & Graham, Westboro.	S. C. Brown Leg-horns.		
Logan, Jas. S., Morrisburg	Black Langshans.		
LaRose, Chas., Cornwall	Light Brahmas, Black Cochins, White Cochins, C. Indian Game, Andalusians, A.O.V. Orping-ton, G.P. & S.P. Hamburgs, Bantams.		
Luxton, A. G. H., Milton West	S. C. Black Leg-horns, A.O.S.V. Turkey, Toulouse, China, and A.O.V. Geese, Ducks.		
McNeil, Wm., London	R. C. Brown Leg-horns, Hamburgs, Poland, Bantams.		

MEMBERS OF EASTERN ONTARIO POULTRY ASSOCIATION AND VARIETIES EXHIBITED.—Concluded.

Name and Address.	Variety.	Name and Address.	Variety.
Robertson, Robert A., Billing's Bridge	Buff Plymouth Rocks, Buff Orpingtons, Pekin Ducks.	Telfer Bros., Milton West..	B. B. Red, Brown Red, Duckwing, Pyle, A.O.S.V. Game.
Robertson, Geo., Ottawa	White Plymouth Rocks.	Thomas, George, Cumming's Bridge	Plymouth Rocks and Minorcas, Pekin Ducks.
Richardson, J. A., South March	Emden Geese, Pea Fowl, Wyandottes.	Teale, W. J., Guelph	Langshans, B. R. Game, Indian Game, A.O.V. Owl.
Ridler, L., Guelph	Carriers, Pouters, Fantails, Magpies, Swallows, Archangels.	Tomalin, Jos., 592 Ossington avenue, Toronto	Dressed Poultry.
Readwin, A. & T., Guelph....	Cochins, Wyandotte, Leghorns, Pigeons.	Vance, John, Brockville	Langshans, Buff Plymouth Rocks, S.C. White Leghorns, Black Minorcas.
Stroh, M. H., Waterloo	A. O. V. Orpingtons.	Warrington, J. H., Cornwall..	Spanish, Silver Grey, Colored and White Dorkings, A.O.V. French, Red Caps, Cayuga Ducks.
Slinn, W. H., Ottawa	Buff Orpingtons.	Williams, J. H., Hintonburg.	Buff Cochins, White Cochins.
Sage, L. C., London	Dark Brahmas, A.O.V. Wyandottes.	Wallace, William, Ottawa ..	White Wyandottes.
Short, S., Ottawa	Barred Plymouth Rocks, White Wyandottes.	Willis, H. H., & Daigel, E., Granby	S. C. Brown Leghorns, Barred Plymouth Rocks.
Stewart, W., & Son, Menie....	R. C. Brown Leghorns, Silver Grey Dorkings, Bronze Turkeys, Pekin Ducks.	Whitney, L. W., Hintonburg.	Orpingtons.
Snelling, W. H., Ottawa	Buff Orpingtons.	Wales, F., Milton	Light and Dark Brahmas, Buff and Partridge Cochins, Langshans, Golden Wyandottes, B. B. Red Game, S. C. White and Brown Leghorns, Black Minorcas, Andalusians, Houdans, W.C.B. Polands, Emden Geese, Ducks.
Snetsinger, Jas., Eamers Corners	White Wyandottes, S. C. Brown Leghorns, Houdans, S. S. Hamburgs.	White, Geo. J., Hamilton....	Black and A.O.S.C. Carrier, L.F. Clean Leg Tumbler, Red and Black Barb, Dragon, English Owl, Game Bantams.
Smith & Browne, Columbus..	Barred Plymouth Rocks.	Zavitz, L. V., Ottawa	Black Minorcas.
Thompson, A., Allan's Corners	Bronze, White A.O.S.V. Turkeys, Toulouse, Emden and China Geese, Rouen, Aylesbury, Pekin, Cayuga and A.O.V. Ducks.		
Tooker, F. L., Brockville	Buff and Partridge Cochins, Golden Wyandottes, Partridge Wyandottes, Buff Orpingtons.		

The Provincial Winter Fair.

PUBLIC MEETING.

The public meeting in connection with the Provincial Winter Fair was held in the City Hall, Guelph, on Wednesday evening, December 13, 1906. Many were unable to gain admission, as the hall, though a large one, was inadequate to hold all who presented themselves.

The musical programme, which was under the direction of Captain T. E. ROBSON, was much appreciated by the audience.

The chair was taken at 8 o'clock by Hon. NELSON MONTEITH, Minister of Agriculture.

The chairman called upon Mr. J. P. DOWNEY, M.P.P., to address the meeting.

ADDRESS OF WELCOME.

J. P. DOWNEY, M.P.P., GUELPH, said that the task allotted to him was to convey a brief word of welcome from the citizens of Guelph to those gathered at the Winter Fair, and it was a very pleasing one for him to have to perform. As was well-known, the present Winter Fair was the outgrowth of the early efforts of the Guelph Fat Stock Club. Under the auspices of that Club it had grown year by year until the Government took hold of the matter, and, after taking the Fair to different points in the Province, had brought it back to its old home. He believed it to be the wish of every citizen of the Province that Guelph should be its abiding place. He hoped to see it grow year by year in usefulness and interest and also in profit to the great agricultural community which it was destined to serve.

REPLIES TO ADDRESS OF WELCOME.

MR. ARTHUR JOHNSTON, President of the Winter Fair, in responding to the citizens' welcome as presented by Mr. Downey said, on behalf of the management, that they fully appreciated the obligations they were under to the City in connection with the Winter Fair. Guelph had supported the Fair by every means in its power, and the management desired to express their appreciation of that fact. He was sure that the visitors would meet with the same hearty reception as they had always received in the past. He had no doubt, he said, that Guelph would continue to be the home of the institution. He had had the privilege of meeting the agricultural population of most parts of England, Scotland, and the United States, but in none of these countries he had come across a more intelligent audience than the present.

HON. J. W. ST. JOHN, M.P.P., Toronto, in further reply to the address of welcome, said that he was very much impressed by what he saw on this his first visit to the Winter Fair. The practice of farming was to-day very

different to that pursued in his boyhood. In these days in order to obtain the wealth that existed in that great mine, the farm, honest, earnest endeavor was necessary. The interest manifested in the Fair conveyed to him that to-day the farmers were earnestly seeking for the information and knowledge necessary to enable them to secure the greatest returns from their labors. The supplying of this information was the problem that confronted the Minister of Agriculture. One of the means by which increased returns could be secured was by the improvement of all classes of live stock. He expressed the hope that the ensuing year would have increased happiness and prosperity in store for the people of the Province.

HONORABLE NELSON MONTEITH, Minister of Agriculture: It falls to my lot to echo the sentiments expressed by my friend, Mr. Johnston. The sight of such an audience as I see confronting me to-night is sufficient to make the breast of any true Canadian swell with pride. When we consider how thoroughly representative is the character of this audience, we realize what interest is being aroused by the earnest agricultural effort we have put forth. I regard it as one of the best endorsements we could have of the organizations which are helping to bring about the improvement that is apparent in our agriculture. To the forces I refer to has lately been added another, namely, the Women's Institute, with the betterment of the farm home as its object. This is the youngest, but at the same time one of the most enthusiastic organizations, as all who attended the Convention just concluded at the lecture hall of the O. A. C. will admit. This organization is allied to the regular Farmers' Institute, and together they have a membership of from twenty to thirty thousand in all parts of the Province. In our Agricultural Societies and other organizations we have a membership of from sixty to seventy thousand, giving a total of one hundred thousand persons who are united in some form of organization, having for its object the furthering of agricultural effort in our Province. When we remember that although the rural population of this Province has stood still, or even gone back, during the last ten or fifteen years, the value of our products has almost doubled, we begin to realize what this organized agricultural work represents in our welfare. The result of it speaks volumes for the intelligence of our farmers

This Winter Fair is becoming a great reunion for the farmers after the labors of the season are concluded. It affords a few days of recreation when they may come here and talk together on questions of interest to them; when they may see and discuss the grand specimens of live stock on exhibition and secure new inspiration for the work of the ensuing year. For these purposes I am sure no more suitable place could be found than the city of Guelph, the centre not only of agricultural instruction in the Province but of an important stock raising community. I am told that pure-bred stock has been present in this district almost from the time of its first settlement, and that from here it has been distributed to points throughout the Province, thus adding materially to the wealth of the community. The words of praise and welcome uttered by your representative, Mr. Downey, will, I am sure, be received by all present in the spirit in which they were spoken, and on behalf of the chair, I desire to thank him and the community he represents for their good will and able assistance.

ADDRESS.

By HON. JOHN DRYDEN, Toronto.

I too am delighted with the audience we have here to-night, and why should I not be when I remember that it is the outcome of the Educational work of our splendid Farmers' Institute system in this Province during the last twelve or fifteen years? No wonder this audience looks intelligent; no wonder that the ladies and gentlemen before me look bright and cheery. It looks exactly as I expected, for I have seen something like it here before on previous occasions. This meeting is like old times come back again. It seems a long, long time since we were here before, I suppose because so many things have happened since, and some of them as the little boy would say were "Awful sudden." (Laughter.) But if they were sudden, they were sufficiently definite and emphatic, and could not be overlooked. Nevertheless the sun still shines, the birds still sing, it is fine weather, the roosters crow just the same if you get up early enough to hear them, and the Winter Fair is in full swing; and I am here just the same, too. (Cheers.) I am glad to be here. This meeting stirs up in my mind a good many old associations. It takes me back to the beginning of agricultural education in this Province—shall I say in this Dominion. It takes me back to the time when this Winter Fair had no home, and was wandering around the country looking for one. A number of places tried hard to secure it. I knew then, as I know now, where I desired to see it located, although I did not dare, as the Premier will understand, to say anything. All I could do was to assist others to see the matter as I did, and then leave them to act as they chose. (Laughter.) Now, however, I do not represent anybody except myself, and have nobody to please except myself and you, of course. (Laughter.) Therefore I may say in Mr. Downey's hearing that I wanted it to come to Guelph all the time, not because I loved the people of Guelph any more than I loved the people of other places, but because the one institution representing the farmers of this Province was located here. I desired that the boys at that College on the one hand should have the benefit of the educational influence of this fair, and that the farmers on the other should reap the benefit of some of the advantage the College offers. I think these were good, loyal, Canadian reasons. But, some will say, why bother about these young men; let them get on the cars and come to the Fair like the rest of us; why should you be so particular about them? People who talk like that forget that every educated, well-equipped young farmer is a distinct asset to the whole country. These are the men whom we expect to give stability and character to our people. I have been living in the city for two or three years, and my conclusion is that the city is not the best place to develop character; you must go to the country for that,—to these young men who are to wrest from the soil the wealth that exists there.

The Cobalt district is attracting a lot of attention at the present time, and the mines there are creating a good deal of interest. Do not let us forget that we have a richer and far more certain mine than any existing at Cobalt—the great agricultural mine of this Province. We must not forget that it will pay to develop this mine, and that it will pay dollars and cents. We are increasing its production, to be sure. Only the other day I saw a statement to the effect that in this country we have increased the value of our dairy products by ten millions of dollars this year; that is to say, they had brought that much more this year than in any previous year. This does

not mean that more cows were being milked, but that with the same number of cows the value of the produce had been increased. I do not think it has cost us much more to increase the value of this product, and if not, then it is just as good as gold from the gold mine,—it is new-found wealth. One reason why I say that this is a greater mine is because it never runs out. Gold and silver mines become exhausted, but this one becomes better and better as the years go by. I said that it pays to work this mine, and I am expecting my successor to work it properly, and not to begrudge the funds necessary to develop it, because the people of this Province have decided that the work of development must go on.

If I were asked to name the agency through which we might expect to secure the greatest results in this regard, I would say the Winter Fair as it relates to the live stock interests of this Province. To prove how far-reaching are its effects, I have only to point to the fact that we succeeded through its agency, assisted by the Farmers' Institutes, in practically revolutionizing the hog product of this country in about two years. We have now reached a critical point in connection with that industry, and the trouble seems to be that the packers will not take us into their confidence. If they would do so, I guarantee that the hog product of this country would increase satisfactorily, both in quantity and in quality. But we are asked to keep on producing a superior article when the packer will not pay a cent more for a good one than for a bad one, and it is pretty hard work to induce people to do that. When I was Minister of Agriculture, I received many letters from the packers urging me to do something to enable them to obtain more hogs, and hogs of a uniform bacon type. We did our best, but they have failed to second our efforts. If they would confer with a committee of farmers, they would soon learn how the results they desire could be attained. All that is required is to keep prices a little steadier, and to pay a little more for a good article than for a poor one. When a man is producing a superior article, he should receive for it what it is worth. It is useless to set up ideals and ask the farmers to follow them unless it makes the money jingle in their pockets. Therefore we require the help of the packers in this matter, and I trust we shall get it sooner or later.

One of the chief results of this Fair is that through its agency we form new ideals all the time so far as live stock is concerned. The need for high ideals in this connection was never more pressing than at present. The Show has given a great impetus to the poultry industry of this country. I do not know that we are producing much more poultry than ever before, but I know we are producing better poultry. It is now possible in a city like Toronto to purchase good poultry. There is an increasing market for it, and people should be encouraged to produce more of it. The same thing is true of the dairy industry, and it is in connection with this industry, perhaps, that the most marked improvement is to be seen. These milkless cows of splendid pedigree, because of the systematic tests that are going on are being labelled N.G.: they are being discarded, and their places taken by pail-fillers. These are the cows you must utilize, because they are money-makers. If you can increase the quantity, and at the same time improve the quality, you are bound to win out. The end and aim of this institution and of this effort is to show the way to improved returns.

We hear a great deal about the tariff in these days. Some people argue that it should be reduced, and others that it should be increased. The farmers were heard before the Commission in a good many places, and in my

judgment their arguments were as clear, and strong and convincing as any supplied on either side. For my own part, I long ago discarded the tariff as a money-maker for the farmer. It may hinder you and prevent you from doing as well as you would otherwise do, but it cannot aid you. In my judgment here is one word which always expresses what is best for the farmer and that word is "Liberty." Do not tie the farmer up; let him have his liberty, and trust to his intelligence to do what is best for himself.

While there is no money in the tariff for the farmer, I can tell him a few things in which there is money. There is money in safe, quick, cheap transportation. What a splendid country we have for fruit in some sections of this Province, and yet how many thousands of our people cannot get it for lack of proper transportation. I do not think Mr. Fisher will object when I say that it seems easier to get a hundred millions of dollars to build a railway through the wilderness than it is to get a few thousand to build proper cars to carry fruit to the Northwest where the people are asking for it.

There is money for the farmer in products that are of a higher quality and of a more uniform standard. Why is it that so much money is being made out of the cheese product? You say because prices have improved, but is not this higher price due to the improved quality of the product brought about by the persistent and continuous instruction in connection with this particular industry. Some people in a community think that instruction is too slow a method—they would have the law to compel men to produce a better article. I never could see the force of this argument. Education may be a slow method of bringing about the desired result, but it will get there in the end.

Another thing in which there is money for the farmer is in co-operation. Co-operation is the best word I can bring you; it is the word of the hour so far as the farmer is concerned. The Agricultural Societies, Farmers' Institutes, Winter Fair, and other agricultural organizations are all working on this plan, but I should like to see the work carried still further. I should like to see the principle applied to whatever the farmer has to buy or sell. The situation at present is this: when the farmer goes to buy anything he finds that he has to pay the highest retail price for it, but for everything he has to sell he receives the lowest wholesale price. Take the case of cattle: you sell them at about $3\frac{1}{2}$ cents a pound live weight, which means about five cents per pound for the dressed carcass. That animal reaches Toronto, and there the consumer has to pay all the way from eight cents (which is the lowest price) to eighteen cents per pound for it. The same thing applies to other products. If you could only co-operate, first, in the production, and second, in the selling, a part at least of this difference in price would find its way into your pockets. I think that in some lines of production it is quite possible to do this, especially in fruit. Co-operation in buying would also effect great saving for the farmer. As it is at present, the profits are cut off at both ends and there is not much left in the middle.

My last word to you who come from the farms of this country is to remember co-operation, and then remember to be brothers. Do not follow the way of the city where every man is for himself, and where it would seem that the hand of every man is turned against his neighbor. In the country the interest of each one of you should be in your neighbor. Your strength lies not in hindering your neighbor but in helping him. If you are carrying out that principle and continue to do so, I will promise you what I am now going to wish you and that is a happy and prosperous New Year.

ADDRESS.

By HON. J. P. WHITNEY, PREMIER OF ONTARIO, TORONTO.

I remember coming to this city some years ago with the object of visiting the Winter Fair, and I have been looking forward with a great deal of interest and expectancy to repeating my visit at this time. I desired to see how the Royal City had progressed during the last four or five years; to see whether the evidences of improvement and satisfaction with life, which meet the eye, I am thankful to say, elsewhere in this Province, would be found to exist here also. I find, as Mr. Dryden said, that the Guelph Winter Fair is in full swing, and I hope that whatever comes to pass in the future, we shall still find it year by year in full swing; that we shall find this pendulum, which to a certain extent represents the agricultural heart-throbs of this Province, swinging farther backward and forward as time goes on, bringing greater advantage to the people, greater progress to the country and greater satisfaction and happiness to every class and occupation in this country.

I have some small knowledge of the matters that come under discussion with reference to a fair of this kind. In this connection I was greatly surprised, and a good deal impressed on my first visit here, and I was equally gratified this afternoon when I again listened to the very clear explanation given by the lecturers in the lecture-room, and observed the intelligent attention paid by the people gathered to hear those addresses. Just one little personal selfish note—the only one you will hear from me to-night. In 1888 I entered the Legislature. About forty-eight hours before the close of the Session, when there was a good deal of confusion, as there always is at that time, I managed with the kind assistance of Mr. Dryden's predecessor, the late lamented Mr. Charles Drury, to secure the attention of the house for five or ten minutes, to urge upon those who listened to me the propriety and importance of endeavoring to reach that portion of the farming community, which obviously, for reasons which need no explanation, cannot secure any of the advantages to be derived from the O. A. C. It seemed to me then, and I suggested it, that an effort should be made by the Government of the day during the winter months to send out graduates of the O. A. C. to different centres of the Province, and, for the term of two or three weeks, let them give lectures on practical agricultural questions, not scientific ones, as I was satisfied that a large number of the farmers, both young and old, would from their interest in the subject, attend these lectures and gain much valuable information. I am happy to say that since that time others have fallen in with the view I then expressed.

In reference to this fair, I am pleased to note that it has gone on from being a struggling institution to one of ever-increasing vigor and strength, until to-day it may fairly be looked upon as a permanent institution in this Province. So far as I have any right to encourage it by suggestions of the kind, I will say that, if by any reasonable effort I can make its position can be further strengthened, I shall be only too glad to make that effort. I did not come here to-night to refer to public questions of any kind. I came rather in a receptive mood; first, to learn from actual observation the situation of the Fair at Guelph and what I have learned has been greatly to my satisfaction, and also to learn anything else that was to be learned on an occasion of this kind. I came here also to express my pleasure and satisfaction at the success of this fair, and to congratulate the people of this Pro-

vince, and of this district in particular, on that success. I hope that nothing will occur in the future to bring discouragement on that score. I do not think the people here need have any fear that in the future any Government having regard to the interests at stake will fail in doing its duty to this great Winter Fair.

I am glad to be here to-night and to have on the platform with me my young colleague, the Minister of Agriculture. One qualification which commended him to me when selecting a Minister of Agriculture, was the fact that he was a graduate of the O. A. C. I am glad also to welcome the Dominion Minister of Agriculture, Hon. Sidney Fisher, whose jurisdiction and powers in connection with the agricultural interests relate not only to this Province but to the whole Dominion. You will allow me, I am sure, to welcome him not only in his official but also in his personal capacity. There is an additional reason why I am pleased to be here to-night, and that is to welcome Hon. John Dryden on this platform. I recognize the fact, and who does not, that Mr. Dryden as a public man took a particularly earnest interest in agricultural questions, and I believe he did the best he possibly could for the agricultural interests of the Province. I have no doubt that other people differed from Mr. Dryden from time to time, just as men do who hold opposing views on other questions; it is right and proper that it should be so. But I do not believe any man ever had any doubt that Mr. Dryden gave all that was in him for the benefit of the agricultural interests of this Province. I am therefore glad to be with him on this platform.

I want to congratulate all the people of this Province on the wonderful season experienced in 1905 so far as agriculture was concerned. From the beginning to the end, the favor and blessing of the Almighty has been poured upon this people. It has been so usually in the past, but to an even greater degree this year. With my concluding words I cannot do better than express the hope that so long as we live, and during the lifetime of the children that come after us, both we and they will so conduct ourselves that we may deserve and receive a continuance of the Divine favor in this respect.

ADDRESS.

BY HON. SYDNEY FISHER, MINISTER OF AGRICULTURE FOR CANADA, OTTAWA.

I want to congratulate the Fat Stock Show and those interested in promoting it on the manifest interest, the intelligent interest, which is shown in the work of education here carried on. I do not wonder at it, when I remember that Guelph is the seat of the Agriculture College. You, if anybody in Canada, have had abundant opportunities of seeing the effect of agricultural education. You have been able to reap the benefit of the continuous experiments that are carried on under your eyes, the results of which are brought before you more closely and more directly than before any other people in this country. You, therefore, have had opportunities which the farmers of other parts have not had. When I started farming many years ago I had not the advantages of an agricultural education. I had to buy my knowledge and experience on my own farm, at my own expense. I learned the lesson that those who can do so ought to go to an agricultural college and get the advantages which I did not have. Agriculture requires special education and training, just as much as any business or profession in

our social system. I know that to-day the men who are the best product of the successful agriculture of Canada are those who have had the best training and education for the business, and that the Guelph Agricultural College has been the main spring of that improvement and progress. It is a few years since I have been with you here, and during that time some changes have occurred. I allude particularly to the departure of Dr. Mills, who was at that time President of the College. He has passed from that position to one of perhaps equal importance in the present condition of affairs in Canada. He took with him a reputation he had made for himself as a business man and man of character, qualifications which we look for as being essential in the men who are to occupy places on the Railway Commission. In this particular instance we required a man who was in close touch with the agricultural world, because the interests of that portion of the community were closely related to the work of the Commission. I may tell you frankly, without breaking confidence, that the Government who had to appoint that Commission were extremely gratified and believed themselves fortunate that they were able to secure the services of such a man as Dr. Mills. To-day the College has at its head a younger man, a man full of energy and activity, a man who through his short career has been in close touch with the agricultural life and progress of this Province; a man who has a close acquaintance with all the needs of the farmers. Let me once more congratulate the College and the farmers of Ontario that Dr. Mills has been succeeded by so worthy a successor as Mr. Creelman. We may feel confident that the College will progress in the same successful way as before and with the same magnificent results.

I come here to learn of you farmers and not to teach, but there are one or two things which I find my mind is full of at the present moment. Mr. Dryden alluded to the fact that the question of pork-packing and the production of pork is a very interesting one at the present time, and is deserving very largely of the attention of the people of this Province. I need not dwell on the magnificent progress that industry has made in Canada in the last ten years. At the present moment there appear to be some difficulties standing in the way of the continued progress of this industry. A deputation of packers from all parts of Canada waited upon me recently and made the statement that sufficient hogs were not being raised to meet their requirements. This, it seems to me, is a very serious and important question, because with a sufficient supply there is an almost unlimited opportunity for expansion in this trade. Why is it that the packers cannot find enough hogs in Canada to meet their requirements?

Q.—They will not pay a high enough price for them.

MR. FISHER: I dare say that is true to a certain extent, but my belief is that there is another point which is of even more importance, and that is, that they should discriminate and pay more for a good hog than a poor hog. It is said they do not pay enough money but, in defence of the packer, I must tell you that the price they can pay for Canadian hogs depends a great deal on the market price of bacon in England; that we are not the only suppliers of bacon in England, but have to compete there with Danish, Irish, and other products, and that if the price of hogs is raised too high in Canada, they will not be able to compete with those countries. The prices which the packers pay, are paying, and have been paying all through this last season,—and I think I may go farther and say that the average price for the last five seasons—has been a price at which farmers can better afford to raise hogs than they can do anything else on the farm. I do not pretend

to be able to raise hogs as well as you can, but I know that I have been able, during the past four or five years, to make from 25 to 50 per cent. on every dollar put into hogs, and I sell them to the same packers as you do. This is a profit which no one in this country need object to, and there is not very much else in connection with the business of farming that will pay more on the investment.

I find that our farmers are increasing production in all live stock branches. They have been exporting more and more live cattle, dead meat, butter, cheese, poultry, eggs, with each succeeding year. I am glad to see this because I feel,—and everything I see as I travel through the country proves it to me—that the interest of the farmers of Canada can best be served by turning all their crop products into live stock and marketing them in the shape of live stock. I need not tell this to you, because you are essentially live stock farmers, and it is because you are live stock farmers that you and this great Province of Ontario are so eminently prosperous to-day. Mr. Dryden spoke about the increase of our dairy interests. I have not got exact figures, but from a rough estimate made the other day, I see that this season we have exported about eight million dollars worth of butter, whereas ten years ago we did not export one million dollars worth. The dairy industry is at the foundation of the bacon industry, because it is almost entirely due to the position of the dairy industry that you are able to produce hogs at the low price and consequent profit to which I have alluded.

When the packers asked me recently what could be done to increase the number of hogs raised in Canada, I suggested that it might assist a little in getting the confidence of the farmers of the country. If they would follow in the lines so well laid down for them by the first and greatest pork packer of Canada, Mr. Wm. Davies. There was no one man in Canada who for many years did more than he did to encourage and help that industry. Another suggestion I made to them was, that when they sent out their buyers, they should offer half a cent more for the typical bacon hog than they gave for a thick, fat hog, which was not worth as much within a cent per pound. I hope they will take my advice.

We have here in Canada many agricultural problems to face. Those connected with the dairy industry are among the most important. One of the difficulties we meet with in connection with that industry is that probably one-third of our cows are not producing any profit for their owners. Some of them will show a profit; others just about pay their way; while others again are being fed at an actual loss. How many of our farmers know which cows in their herd pay them to feed and which do not? I am convinced that it is absolutely necessary for every man who has a herd of dairy cows to regularly weigh and test the milk of each individual cow, if he desires to know anything about the character and quality of his animal. In no other way can we increase the milk capacity of our herds than by discarding the poor cows and retaining the good ones, and yet very few of our dairymen have adopted this practice. If we could find out just which of our cows did well and which did poorly, we could add at least twenty-five per cent. to the product of the Canadian dairy without adding a single cow to the number now being milked. In the state of Denmark, where co-operative associations have been formed and a careful system of selection and testing is carried on, the results have been highly satisfactory, not only to the owners of the herds but to the managers of the cheese factories and creameries to which the cream is sent. I wish to call upon the dairymen of this part of

Canada to take the lead in making an advance in this direction. Any information I can give you, or any assistance that can be offered through the officers of my department will, I can assure you, be most cheerfully given, and to this end I would suggest the formation of an association of cow owners who will undertake to test their herds and take the lead in a movement of this kind.

I want to congratulate you, Mr. Whitney, that when you formed your Government, you were able to secure for the very important position of Minister of Agriculture, a graduate of the Ontario Agricultural College. There is no doubt that you would naturally turn to the list of graduates for such a man. I do not wonder at that, because, when in my departmental work, I want to get an experienced expert, a man who will be able to do good work for this country, I always try to get a Guelph graduate.

ADDRESS.

BY HIS EXCELLENCY, THE RIGHT HONORABLE EARL GREY, GOVERNOR
GENERAL OF CANADA.

I wish to thank you for the very kind reception you have given me on my first visit to Guelph and to the Winter Fair. I entered the lecture room this afternoon with the expectation that I was to be present at a lecture in which would be pointed out the various points of merit in the animals under examination. This is a feature which is entirely new to me on an occasion of this kind. I have attended many shows in the Old Country, but at none of them have the judges informed those present as to the good and bad points of the animals under discussion. I think that the practice is an exceedingly valuable one, and I congratulate you on having started it here. It will certainly result in making the judges extremely careful, and it cannot fail to give good satisfaction, particularly to the owner of the prize animal. It will also help those who fail to get the prize to have the reasons upon which the award was based, pointed out to them. This is the first occasion, too, where, in connection with a show of this kind, I have known of a lecture room being provided where prize animals could be brought in and their points of excellence explained to an audience of agriculturists, and information given on the most approved methods of conducting the live stock business. These gentlemen cannot fail to obtain useful information at meetings of this kind. I am very much pleased with what I have seen in this regard. I accept with many thanks the address presented to me and congratulate you on the great educational value of the work of this Winter Fair.

Lectures on Practical Subjects delivered in the Lecture Room in the Winter Fair Building, Guelph.

REARING TURKEYS FOR MARKET.

BY W. J. BELL, ANGUS.

A good many people consider turkeys hard to raise. I will try to explain the principles to be observed, and to indicate why failure is sometimes met with. The first thing that is necessary is plenty of range. The ordinary hundred acre farm is an ideal place for raising turkeys. It affords ideal conditions for fifty birds. Turkeys are raised most successfully where no other fowls are kept. One of the reasons why turkeys have not done well recently is because farmers are keeping other fowls more generally. Turkeys should never be allowed to roost with hens. In selecting breeding stock, choose birds that are long rather than deep in body, birds that stand up well, and are long and round in conformation. I let my breeding stock run in the barnyard during the winter, and allow them to roost in an open shed facing the east.

The nests should be prepared in good time in the spring, as this will prevent a tendency on the part of the birds to roam, and save much inconvenience. A box or barrel will answer for a nest, and it may be placed in a fence corner or the corner of a shed, or any likely place, throwing a little hay in the bottom. I collect the eggs as soon as possible after they are laid, but probably a man who is raising turkeys for market will not care to take this trouble. One china egg is left in the nest so that the hen will not forsake it. Turkey eggs should not be hatched by chicken hens; they will hatch the eggs just as well, but I think it is fatal to allow young turkeys to run with chicken hens as they do not understand their nature and therefore the young birds do not thrive as well. The nest for setting should be made as flat as possible as otherwise the turkey hen, being a heavy bird, will crowd the eggs to the centre and is very apt to smash some of them with her feet. I always dust the nest with insect powder and usually use a little chaff in the bottom. I allow the hen to leave the nest whenever she pleases for food and water. About the 26th day, thoroughly dust the hen with insect powder while she is on the nest so as to drive away insects before the young birds are hatched. About this time I whitewash my old coops ready to receive the hen. If new coops are used, this is not necessary. I prefer them to be low, flat and "A" shaped.

Q.—Do you use any disinfectant in the whitewash?

A.—No. It is sometimes difficult to get the turkey off the nest as they are very wild at that time and will often fight. I run my hand underneath the bird and remove her just as quickly as possible to the coop. In making the nests I should have stated that I construct them in such a way that the young cannot escape when hatched, otherwise, in many cases, the hen would go off the nest with the first hatched ones and leave the later hatched ones to perish. If the weather is very cold at hatching time, I take them, when about twenty-four hours old, to a large dry-goods box, placed on the south side of a building, and there confine the hen and her young ones for two days or until the weather moderates. Loose boards are placed on the

top of this box, left sufficiently open to admit light. If the weather is warm, they may be removed to the coop at once. The young birds are allowed to run in and out of the coops just as they like, placing a board in front of the coop at night. The coop must be removed every day to a fresh place on the grass. If the weather is very cold and wet, however, I sometimes allow it to remain for a day longer.

Care as to food and drink is necessary, but the kind of food given is not nearly so important as it is to observe method in feeding. Above all things avoid sudden changes in the ration. I leave the young birds for one or one and a half days after hatching and then feed stale bread soaked in milk. Fine gravel or grit is placed where they can get all they require.

Q.—How moist do you make the bread?

A.—I allow it to soak up all it will take. The second day I usually add a little shorts, as shorts digest easily, and after that I feed shorts and milk alone. The young birds are fed five times a day for five weeks. If fed frequently, the birds will not gorge themselves. The shorts are mixed to such a consistency that if squeezed in the hand, the milk will run out. Skimmed milk, either sweet or sour, may be used.

Q.—Do you make it into a porridge or a paste?

A.—More of a paste. I feed it from the hand to each coop of birds. No food is left in the pen. People often make the mistake of throwing it on the ground in the hot sunshine, where it is apt to ferment and cause trouble. The birds are given milk or water or both to drink. Onion tops are cut fine and mixed with the shorts in one of the feeds each day and dandelion leaves treated in the same manner in one of the other feeds. After five weeks has elapsed, I release the hen from the coop and the birds are allowed to roost on the fences from then till fall. Turkeys will often shift for themselves after this, but in order to be sure that they are never hungry, I always feed them shorts and milk in the morning and whole wheat in the evening.

Many farmers in preparing birds for market do not commence feeding grain in the fall until too late. I do not think it advisable to close them up for fattening, as turkeys do not roam very much when the frost begins to set in.

Q.—What ration do you use for fattening?

A.—I do not make any change. I think that the right time to ship turkeys for export is about the first of December so as to catch the Christmas market.

As to diseases. Diarrhœa is, I think, caused chiefly by indigestion which is induced by improper feeding. It is very difficult to doctor turkeys, and it is best to prevent disease if possible. Roup has been prevalent in my locality; I call it "swelled head." It is caused by the birds taking cold. The first indication is a swelling between the eye and the nostril. If this swelling does not distend in breathing you may be sure that the bird has roup. The only thing to be done is to kill the birds that are affected and either bury or burn them.

Q.—Half the turkeys in my neighborhood died from it this year.

Mr. BELL: I think it may be prevented by killing the first birds affected without delay. I have known cases where birds recovered, but it is the exception.

Q.—Do you feed any hard-boiled eggs to the young turkeys?

A.—No.

Q.—Do you put any pepper in their food?

A.—No.

EXPERIMENTS CONDUCTED DURING 1905, WITH SPECIAL REFERENCE TO ARTIFICIAL INCUBATION AND BROODING.

BY W. R. GRAHAM, MANAGER, POULTRY DEPARTMENT, O.A.C., GUELPH.

The Experimental Union in connection with the Agricultural College has a division, of which I am in charge, which devotes its attention to co-operative poultry experiments. For the last few years we have been experimenting with incubators. We have encountered a number of difficulties in this connection, which are likely to occur to anyone who engages in work of this kind. Early in the past summer our attention was drawn to the fact that many of our experimenters were losing a large proportion of their chickens after hatching. We found that the chickens were affected with what we call white diarrhoea, for which there is no known cure. This is a disease that I never saw occur with hen hatched chicks, so we were obliged to conclude that it was due to some abnormal condition induced by the method of hatching. Some of our experimenters had ninety per cent. of their chicks die of this disease, while with the next hatch no trouble whatever would be experienced. Where only one incubator is run, there does not seem to be the same trouble in this respect as when the business is of a more extended character. Examination of the dead birds reveals one cause of trouble. When hatched, the ordinary weight of a chick is forty grammes. Ten grammes of this consists of yolk, which is absorbed by the chick from the egg before hatching. So far as we can see, one of the causes of the disease lies in the fact that the chick has been unable to digest this ten grammes of yolk. The result is that the yolk becomes more or less decomposed and induces a condition of inflammation of the bowels. The question is what gives rise to this state of affairs. Is it due to the feeding of the breeding stock, to the incubator or brooder, or to the air that surrounds the egg during the process of incubation? The trouble was so prevalent that Mr. Elford, Chief of the Poultry Department at Ottawa, Mr. Baldwin and myself visited some of the plants in Western Ontario where the trouble existed in an aggravated form. As a result of this investigation, we found that, where the incubator room was thoroughly well ventilated, the chicks were strong and healthy in most instances. We observed that the best system of ventilation appeared to be where the fresh air was taken in, or the foul air removed, at about the level of the bottom of the incubator. Where the air was taken in above the level of the machine, the bad air remained near the floor.

On my return I experimented with two incubators, one placed in a badly ventilated and the other in a well ventilated room. In the former case the chickens began to develop the disease when two weeks old. At the same time, those hatched in the well ventilated room where the amount of moisture in the air was fairly high were not entirely free from the trouble. We also developed the same trouble where the chickens had insufficient exercise in the brooder. I am of the opinion that some of the trouble may be due to this cause, and the inference is obvious that the ventilation should be as perfect as possible, and chicks given sufficient exercise while in the brooder. I am bound to admit, however, that the investigation will have to be carried further before we are able to prove conclusively what is the cause of the trouble in all cases, and how it may be avoided. A vigorous condition of the breeding stock will tend to obviate a predisposition to the disease. We find that the largest percentage of eggs is hatched from hens kept in cold, cheaply-constructed hen houses, due I think to the fact that it promotes vigor in the stock.

LAWRENCE BALDWIN, Toronto: The result of my experience in this regard is that, in order to secure success with incubator chicks, the relative humidity or moisture of the air must be kept low, while the temperature should be kept at about fifty to sixty degrees.

Q.—What should be the temperature of the brooder?

A.—It is hard to say definitely. You must observe the condition of the chicks. You can tell by the way they act whether they are too warm or too cold and regulate the temperature accordingly.

Q.—Have you ever had an experience with chicks that are weak on the legs after hatching?

A.—During the first year I undertook artificial incubation I had some trouble in this regard but not recently.

Q.—Where would you advise that the incubator should be operated?

A.—There is no better place than a room in a dwelling house.

Q.—Do you aim to keep the temperature of the incubator uniform throughout the hatch?

A.—I aim to do so, but a slight variation will do no harm.

Q.—What is the reason chicks sometimes die in the shell before hatching?

A.—Lack of vitality in the egg due to lack of vigor in the stock.

Q.—Would you recommend killing young chicks that are unhealthy after hatching?

A.—Yes, if they are crippled in any way?

Q.—Do you think that if the chicks are not fed for three or four days after hatching, it tends to prevent the trouble referred to?

A.—I think it probably would. Any food given will of course tend to retard the assimilation of the yolk. Last year I experimented with not feeding chicks until they were three days old, and out of a hundred and fifty-two I lost only three. They were hen hatched.

Mr. GRAHAM: Hen hatched chicks are never troubled in this way. We experimented with three incubators in the same room. They were run within half a degree of each other and all hatched the eggs on the same day. We lost all the chicks from one, from the other we raised a good percentage. They were different makes of machine but all were handled in the same way, and the eggs were also pretty much of the same.

SQUAB RAISING.

By W. E. RICE, BRIDGETON, NEW JERSEY.

Very great pleasure comes to me in greeting for the first time a Canadian audience. I would like to stand still just a moment and look into your faces and make myself believe that you are not strangers; and this would not be difficult, for your kind faces tell me that you are as warm-hearted as the ones who have given me so royal a welcome to Canada. This courteous reception has been so cordial, that I hope many of you may stray from your happy homes, and come to Bridgeton, in the southern part of New Jersey, and hunt me up and let me show you my pigeon plant, when my best efforts will be to give you as cordial greeting as you have extended me, and I assure that what I have in the way of buildings, fixtures, management, and the birds themselves will be free to your closest inspection.

Now I want to ask you a favor: Please use your note books while I am speaking, so that at the close of the address you can ask me questions. Ask me all you want to, for I shall feel more at ease in answering your questions than in talking to you, and probably may be of more benefit to you.

Now to the subject of Squab Raising: No statistics are at hand to show the extent of the squab industry, the number of persons engaged in it, the size of their flocks, nor the number of squabs produced.

In the county of Cumberland, New Jersey, in which I reside, there are about 30,000 pairs of pigeons kept for raising squabs. I do not know how many there are in the other 20 counties of my State, nor how many in the other 44 States of the Union; but since the publication of the Farmer's Bulletin, No. 177, which I prepared at the request of the United States Department of Agriculture, at Washington, my correspondence on the subject of squab raising has covered nearly every one of these States, showing that the interest in the subject is widely extended.

The demand for squabs has kept steadily ahead of the supply, so that prices have continually ruled firm. The average price for the year 1904 for the squabs marketed by me was 60 cents a pair, and ran from 50 cents during the summer to 96 cents for December and early January. While the present stringent game laws are enforced as they are now, and the area of woodland is annually depleted by fires and clearings, there is no likelihood in the near future that these prices will materially vary, unless some substitute shall be found to take the place the squab now occupies.

So much for a hasty introduction. Now let us consider some of the practical details of the business:

1.—The kinds of Pigeons for best Squabs.

I shall be glad when someone can produce a variety or cross that will excel the pure blooded Homer for raising squabs, but until that time comes I shall stick to the straight Homer. The bird is vigorous, alert, bright-eyed, full breasted, square shouldered, prolific, large throated, good feeder, cares well for its young, and stands to-day far ahead of any other breed or cross breed in existence. Some advocates of the Red Carneaux, and Runt-Homer crosses, have recently published articles claiming greater yield from these birds than from the straight Homer, but in subsequent articles stated that they had not had their respective flocks a full year and could not give a year's record. It is true that in every flock a few pairs of birds may yield ten pairs of squabs in the year, but it is very unfair to tell beginners that pigeons will yield more than an average of from five to six pairs of squabs per pair of adult birds for the year. Since all birds kept must be fed for the full year, the number of squabs they produce above expenses represents the profit. The best yield from my own pens is nine pairs of squabs for each of twenty-five pairs of selected young birds. If I could possibly get this average for my entire flock, it would add materially to my yearly income. Self interest compels me to be on the outlook for the best there is among pigeons for squab raising, and just as soon as anyone has a breed or cross-breed that shall show results any better than my own records, I shall get those birds; but as yet there is no danger of the figures of the Homers being eclipsed.

But the kind of bird is not sufficient for success, for if the best of Homers are over nine years of age their usefulness as a rule is passed, and it is difficult to tell the age of pigeons, especially in the case of Homers which are not

heavily wattled and cered, as is the case with Antwerps, Dragoons, Carriers, and some other varieties. A Homer at nine months is usually full grown, and it is almost impossible to distinguish it from one that is six years of age. If experts cannot judge the age of Homers, a beginner cannot hope to.

Again, first-class Homers may be permitted to inbreed too closely and their offspring will lack vitality and be very unprofitable as squab producers. Old birds, worn out birds, and birds lacking vitality are often found in the hands of dealers, and sold to an unsuspecting customer, but they are never anything but a bill of expense.

2.—Proper kind of Buildings.

A convenient and well constructed building is necessary for squab raising. This can be secured by erecting a structure 12x40 feet with a 3 foot alleyway running the entire length and having a door at either end. Four partitions divide the remainder of the house into five equal parts or pens and each pen will accommodate 50 pairs of birds, thus giving a capacity of 250 pairs for the house. If only one house is needed, it is well to set apart one compartment for a feed and supply room, in which the squabs may be dressed. Light and ventilation are secured by two sliding windows in each pen, one in each gable near the peak, and two in the side next the entry. The gable windows and those in the pens are covered with poultry netting and the same material is used in making the partition between the entry and pens. A door of the same poultry netting leads from the entry to each pen, and a similar door is at each end of the entry, and all of these netting covered doors are hung with spring hinges, so that they will be self-closing. First-class lumber laid over building paper is used for the sides and the north side is sheathed on the inside. The material for the sides and floor should be matched or tongued and grooved, and the whole building covered with a good shingle roof. The partitions run from floor to roof. The whole building rests on piers set twelve inches from the ground. Unless this precaution is used, rats, weasels, minks, cats, or other animal enemies might gain access, and in a single night destroy a large number of squabs. Nests are placed against each partition and end, and are 12 inches square by 9 high, the bottom of each nest resting on cleats and cut scant so as to be easily removed. For 50 pairs of birds more than 100 nests are necessary, as some fast workers will have three nests in use at one time; 110 to 120 nests are not too many to furnish a house properly.

Exercise for the birds is provided by building a cage or fly outside and adjoining the house. This wire cage is made of poultry netting of inch mesh to exclude the sparrows, and is 8 feet high and 32 feet long with partitions to keep each pen of birds separate. Boards on which the pigeons may sit, run about or sun themselves, are placed about four feet from the ground. These are six inches wide an inch thick, and are nailed on brackets against the side and end of each pen. Excepting these boards, the inside of the pens should be entirely free from obstruction so that no possible chance be given the birds for injuring themselves as they fly about. The birds pass in and out of the pens through exit holes six inches wide and the same high, cut rounding at the top, and placed above the windows, and an alighting board is furnished on either side of these exit holes on which the birds may stand as they pass in and out.

The building must be well painted with two coats of good paint before being put in commission, and also well whitewashed with two coats of carbolated whitewash on the inside, and when this is all done the structure will

have cost, according to the figures prevailing in my section, \$250, or just \$1 a pair for the birds it accommodates.

If the building as described be too large for a beginner, he may build one or more sections as he may require, being careful to preserve the dimensions given.

3.—How to Buy Birds.

This is very important, for on the proper purchase of pigeons hangs future success. A few simple facts concerning these beautiful birds should be known before he buys.

One fact is that one male and one female, after a period of love-making, choose each other, thus constituting a pair of mated birds, and having thus chosen each other, remain faithful to each other usually during their entire life. I say usually, for the exceptions are very few, and I think it is fair to the birds to add that the exceptions in the human family, who are considered more intelligent, will outnumber those of the birds.

Until birds do thus mate they are not profitable, but will eat feed regularly twice a day.

Another fact is that an equal number of birds of each sex do not constitute mated pairs. If one were able to pick out 50 cocks and 50 hens and place them in the same pen, it does not follow that he would have 50 pairs of mated birds, for the birds select each other in their own way, as explained, and some may refuse to mate at all.

Another fact is that it is absolutely impossible for even an expert to distinguish the sex of pigeons as he looks at them in a flock. In most cases the male bird is large, more robust, with a thicker neck, while the female is smaller, neater about the head, with a thinner neck; but all rules have exceptions. and sometimes a hen is the largest specimen in the flock, and often the size and appearance are so similar that no one can detect any difference. I have had some little experience with pigeons, and would utterly spoil my reputation if I attempted to guarantee that in all cases I could pick out the sexes by looking at them. Three experienced breeders of my acquaintance once went 20 miles to get some hens. Of the 20 birds they selected as a result of their combined judgment 17 proved to be correct; and this is about as good as the best can hope to do.

A correspondent once wrote me that he had purchased 50 pairs of mated birds of a very large dealer, and got 90 cocks and 10 hens, and this dealer made a specialty of guaranteeing the sexes.

Remember that too closely inbred birds lacking vitality, are unprofitable, are apt to give unfertile eggs, or squabs that are too weak to get out of the shell,—or if hatched die a few days afterwards. These birds might be all right to look at, but they will be a continual bill of expense to the purchasers.

Also bear in mind that unmated birds must not be allowed in the same pen with mated birds. An unmated bird of either sex may cut down all profit as long as it remains in the pen. Why? Because if a male, he will be seeking a mate, and give battle to the rightful occupant of one nest and another, scattering eggs or squabs to the floor, and when this happens it means death, for the eggs will be broken, and if the squabs are not killed outright, they will soon die for the parent birds are helpless to replace them in the nest. A hen bird, for obvious reasons, will be as much a cause of disturbance.

Further, remember that birds are not profitable until they are a full year old, and seldom after they reach nine years of age. There are exceptional cases in which some birds mate when under a year and others continue profitable after ten or twelve years, but the average flock will be as stated.

Some advertisers claim that birds will mate when six months old, but all breeders of experience provide a sinking fund for the feed bill until the age of one year is reached. The first squabs of the young couple are often very inferior, and command but a small price.

So too with a flock over nine years of age; the weekly feed bill will often be more than the receipts for squabs. A beginner must know at the start that it will cost at least \$1 per year to feed a pair of pigeons, and that it will require a number of squabs to meet this expense, and the profits, if any, must come from those raised beyond this number.

The novice will be wise if he begins with a few pairs, for he can learn their habits and how to care for them much more easily than with a larger number, and if he fails, it will be much less expensive.

These few facts have been stated so that a beginner may know what kinds of birds to avoid.

How, then, is he to buy? Well, if he wants pigeons that will give him squabs in a few weeks after he puts them in his pen, he must buy mated birds not less than a year, nor over nine years of age, which are vigorous and not closely inbred; which are free from disease and lice; and he had better ask how many squabs the birds produced for a year previous to their sale.

Lastly, and most important of all, he must insist on a written guarantee that the birds are mated, and a list showing which two birds make the mated pair. This is the keynote of buying, and no one can neglect this advice and hope for immediate success. There is too much fast and loose playing with the word "mated" in selling pigeons. These birds are monogamous, that is, one male and one female make a pair, and this pairing is the choice of the birds themselves; and until the birds do thus accept each other there can be no mating, any dealer who sells mated pigeons ought to know positively that they are mated, and he cannot give any value to his statement unless he can furnish it in written list of mates; for if one bird dies, the buyer cannot tell, if the flock be large, which is the remaining mate. All mated birds should have bands on their legs for this purpose.

4.—Feeding and Caring for the Birds.

Come with me and see the daily work. The two gallon, glazed, stone water fountains are brought to the hydrant, and each one thoroughly washed, using a small round painter's brush. They are then placed on a bench, and filled with pure water from a hose attached to the hydrant, and then taken to the pens. Now we get the tin feeding pail, holding 16 quarts, and with a grocer's scoop put a scoopful in turn of sifted cracked corn, Canada peas, wheat and Kaffir corn until the pail is filled, and going to the extreme end of the first pen, toss two scoopfuls of the grain into the trough, which is six feet long by one wide and an inch and a half high. Each pen is fed until we come to the door by which we entered, and we make our exit without disturbing a single bird after the feed has been given. The two scoopfuls make about three quarts, which is the average quantity needed for a pen of 50 pairs. You will notice that I lock the door of each pen as I leave it. Why? Because the birds are feeding the squabs, and must not be disturbed for a couple of hours. The reason for giving the water first will now appear. Now

we are free to go down to the office where I stay until noon, at which time I merely take a look at the different pens and see that all is well. The afternoon feed is given about an hour and a half before twilight sets in, and is the same as the morning feed with the addition of an equal part of millet to the ration; the morning feed being one-fourth of each grain and the evening feed one-fifth. On Thursday and Sunday afternoons of each week, I substitute hemp for millet.

If you can be with me on Saturday, you can witness the weekly house-cleaning. About an hour after feeding has been finished we enter the house first fed, for these birds have had the longest time in which to feed their squabs, and commencing at the top nest, and then the next one below, we thoroughly clean each nest unoccupied by either eggs or squabs, or freshly made, carefully dropping the contents to the floor, when it in turn is scraped and the contents shoveled into a wheelbarrow in the entry way, and taken to the manure heap. Now we will take the bucket of carbolated lime and sprinkle a little in all damp places and in corners and sides of all vacant nests, for the purpose of absorbing any moisture, and repelling lice. During the cleaning we have not forgotten to empty four little boxes containing respectively,—charcoal, oyster shells, grit, all the proper size for pigeons and the fourth one fine table salt, and carefully cleaning them, fill them with fresh stock. Now we will put fine sand, a quarter of an inch deep on the floor, and the house-cleaning is through until next Saturday. You will have noticed as you went about the different houses, that the birds were not much disturbed, some even refusing to leave the nests, and others which had at first gone out to the fly, came back and went to their nests, and you did not fail to notice how quietly the cleaning was done, no noises made or any quick motions that would startle the birds. In fact in my pens I have never had any ill results from the house-cleaning.

Once a week the water fountains are disinfected with a strong solution of carbolic acid, and also once a week a piece of building lime the size of a hickory nut is dropped in each fountain before being placed in the pen.

During the warm weather a bath is permitted the birds every other day. The bath tub is of zinc, two and a half feet square by four inches deep and well crated, and resting on a platform six inches from the ground. Within an hour after the water is placed in the pans it must be emptied, for it has become fouled and unfit to drink.

5.—*Some Diseases.*

The principal diseases afflicting pigeons are: canker, cholera, colds, roup, "going light," sprouts, vertigo.

The chief causes which help disease to fasten their hold on pigeons are: impure food, foul water, lack of ventilation, and exposure. If one will never give food or water which he himself would reject as unfit for his table, he need have no fear of the cholera. Many cases of cholera or a kindred disease, which have come under my notice, have been caused by carelessness in selecting or giving grains and water. Remember that the supply of these must be absolutely pure, and no musty or mow-burnt grain, or grain which has not become well seasoned, is fit for pigeons, and my word for it, you need have no fear of this disease.

If birds are kept in ventilated quarters, and not permitted to roost in the fly, there will be but little danger of canker, provided the birds were not diseased at the time of purchase. This latter disease is much like diphtheria,

and I sometimes think has its origin in a cold; then follows watery eyes, with secretions at their corners, sore throat, ulcers, and finally canker fully developed. Parent birds, sick with this disease, can easily convey the germs to the squabs while feeding them.

My idea of this complaint being diphtheritic is partly corroborated by a letter from a correspondent in Indiana, who states that some of his medical friends made a careful study of canker in his pigeons, using the microscope and other tests, and claim to have established the fact that the disease is identical with diphtheria in the human subject.

Other diseases are fully treated in the Farmer's Bulletin No. 177, which may be procured free by addressing the Secretary of Agriculture, at Washington, D.C.

6.—*Dressing and Marketing Squabs.*

Squabs are fit for market in four weeks after hatching, and sometimes a few days sooner. At this time they should weigh at least eight pounds to the dozen. If they fall under this weight, the price is much less, while nine or ten pound squabs bring more.

We select the squabs the first thing in the morning, for then their crops are empty, place them in hampers, and take them to the store-room, which in cold weather is comfortably warmed with an oil stove.

As each bird is picked, it is handed to an assistant who removes all the pin feathers, and immediately drops it into a tub of cold water and when all have been dressed, their mouths and feet are washed until all trace of blood and filth is removed. Cracked ice is put in the bottom of the shipping box, a layer of squabs, ice again, and more squabs until all are in, when ice enough to well cover them is placed on top, the lid nailed on and directed plainly to the commission house in New York City.

Unless the squabs are of nearly uniform size, I cull out all under-sized ones, and dispose of them in the local market, not desiring to hurt the shipment by putting in a few skinny ones.

7.—*Importance of a Generous Ration, and Keeping the Birds Free from all Annoyance.*

Much loss comes to breeders of considerable experience by skimping in the ration. This is done by feeding a smaller quantity of one of the grains when its price is high, or by giving too small a quantity of the entire feed. My rule is to feed as much as I think the birds will eat, and at the next feeding, if the birds have not consumed all, give a smaller quantity, remembering always that when there are many squabs in the pens a more generous supply will be needed. The practice of some breeders is to give some feed, and then visit the pens again, and give a little more if needed, and so try to get at the exact amount the birds will eat. This second visit is productive of harm, as it disturbs the feeding of the squabs. I am never afraid of my birds eating too much, but I am anxious to get nice, large, plump squabs, and I never got them in such numbers as I do now when I feed a less generous ration.

Squab raising, to be profitable, must be done in a systematic and orderly way, and any annoyance to the birds will cause a drop in the profits. Among these annoyances may be mentioned visitors at feeding times, rats, weasels, or mice, unmated birds, a quarrelsome bird, or a draft of cold air blowing on the birds at night.

A single rat has been known to kill 20 squabs in a night, and scare the flock so that the squabs would be badly cared for several nights. There are eight barns within a stone's throw of my house, but I never have any trouble from rats because the houses are kept up on piers.

Mice soon learn that a pigeon's nest is a warm place in the winter, and build their own nests there. By their running around at night the old birds are scared from the nests, and in severe weather the eggs are soon chilled or the tender squabs frozen.

One breeder killed 150 mice in his pigeon house in one day and another caught 247 during the month of January. Prices for squabs are highest during the winter months, and every care should be taken, so that the yield may be the largest possible. In my own city I am able to compare notes with three other breeders, whose flocks are the size of my own. During one winter month they all suffered heavy losses, one having 148 eggs chilled, and 64 squabs frozen, and he marketed only 166 squabs. A neighbor of his lost 106 eggs and squabs in a single week in February. I sent to market during the same January 303 squabs, and my entire losses from eggs and birds did not exceed twenty. As squabs at this time were selling at 90c. a pair, the losses were exceedingly heavy. All of these neighbors of mine have some cross-breed birds, and often refuse to feed as costly a ration as I give, nor are they careful to keep mated and unmated birds separated, nor to exclude mice from their pens. The reason of my better success is not because of any luck, but simply because that day by day I insist on giving the very best possible attention to my birds, and permit no annoyance or disturbance which I know will interfere with them.

In conclusion, let me urge any who desire to engage in the squab industry to buy the right kind of birds; to keep them free from rats and mice; to feed the purest grains and water; not to cut down the quantity of feed when the price is high; and to take extra care of the birds every day in the year.

If you decide to keep pigeons, you have my best wishes for your success.

Q.—How do you select your birds?

A.—From the best breeders; I select only from those that give the largest number of squabs.

Q.—What is the cause of dark squabs? Anything in the breed?

A.—I cannot say that there is. When I first started, I used to have dark squabs, and I found that it was caused by feeding too much wheat.

Q.—Is there any advantage in giving milk to drink?

A.—I do not think that it would make them white-fleshed. You cannot feed them like chickens. All they want is pure water, pure grain and clean grit.

Q.—What is the cost of raising squabs?

A.—My estimate is one-seventh of a cent a day or, say, one cent a week per bird. At that rate a squab would not cost more than four cents.

Q.—How many birds can you take care of in a year?

A.—One man can take care of one thousand a year.

Q.—What is the cost of breeding stock per pair?

A.—\$2.50.

Q.—What sized building would be necessary for fifty pair?

A.—A house six by eight feet will accommodate twenty-five birds.

Q.—Must the house be warmly built?

A.—My houses are all well built.

Q.—What would be the lowest temperature?

A.—The water in a stone jug never freezes.

Q.—In this part of the country would it be necessary to use artificial heat?

A.—I would use it in this country, but I would not keep the house warmer than fifty degrees.

Q.—Would the second storey of a building make a suitable place?

A.—It would make little difference to the birds, but it would make a good deal of difference to the man in charge if he had to be climbing stairs all the time.

Q.—I understand from a man in the business that there is considerable difficulty in getting squabs to weigh eight pounds to the dozen?

A.—That is because they do not feed enough; the feeding and the kind of feed used is the whole secret.

Q.—Do you ever feed tares?

A.—No; they might be fed, but I do not think they would be better than peas.

Q.—Do you allow them to fly in winter time?

A.—Yes, on some fair days; and they have access to the fly every day, and we keep the flies clear of snow.

Q.—How large a building would be necessary for fifty pairs of birds, if you had to keep them in all the time?

A.—I would make the building twice as big.

Q.—Are ordinary barnyard pigeons suitable for raising squabs?

A.—The ordinary barnyard pigeon is very sharp breasted and will not plump out like a Homer, and then they are not such good feeders.

Q.—Do I understand you to say that a pair of breeding birds and the nine pair of squabs they produce in a year would cost \$1.00 for feed?

A.—I presume it would cost \$1.25 for a pair of birds, as feed is a little higher now.

MR. F. C. ELFORD: Mr. Rice probably does not know that the squab-raising industry is only in its infancy in this country. I have had quite a number of communications within the last year, particularly from boys who have been reading about squab raising, enquiring whether there is any demand for them in Canada. Until last week I could not say that I had heard of any such demand. Last week, however, I received a letter from a firm in Montreal asking where they could get one hundred squabs per week to start with as a demand had arisen which they could not supply.

Q.—Is it not possible to mate birds by putting the pair together in a small coop?

A.—I think that if birds are allowed to make their own choice, better results will be secured.

THE DAIRY FEMALE FROM BIRTH TO MATURITY.

BY R. S. STEVENSON, ANCASTER.

I have had an experience of twenty years in the breeding of dairy cattle. My experience has convinced me that in order to get a profitable dairy cow it is essential that the foundation should consist of animals bred for dairy purposes. I have heard men claim that there was nothing in breeding, and that the ordinary animal would give as good results as an animal belonging to one of the dairy breeds, if you gave it the same amount of care and feed. I claim that there is as much difference between the heavy breeds and the trotting breeds of horses as there is between beef and dairy types of cattle. No matter how well you may feed a Clydesdale, he will never be able to

trot a mile in 2.14. He has been bred for strength and not for speed. If you want dairy cattle you must go to the dairy type of animal. No dual purpose cow will combine the highest types of dairy and beef production, as dairy and beef tendencies are antagonistic. Dairy animals have been bred to convert a large proportion of their food into milk; on the other hand, beef animals have been bred to convert their food into flesh. In each case, and particularly with the dairy breeds, they have been bred for the purpose in view for so long a period that the tendency has become fixed, and the cow of the beef type, although she may be a fair milker herself, will rarely produce a calf that will become as good a milker as she is. There are some good dairy cows among grade Shorthorns, but pure-bred Shorthorns as a class are not profitable dairy cows. The reason is that the pure-bred Shorthorns imported to this country for a number of years have been of the highest type of beef producing animals, and it is not to be supposed that such animals are capable of producing good dairy cows. In this country we have four prominent dairy breeds, and I should not like to say which is the best. The breed a man fancies is the best breed for him to handle.

In any herd of dairy cows, you will find some good and some poor ones, with the latter predominating as a rule. We have over a million dairy cows in this Province, and the average production is only a little over three thousand pounds of milk. A cow that produces only that amount is not more than paying for her board. If that is the average production per cow, there must be a vast number that do not produce nearly as much, and are therefore not paying for their keep. This is the class that must be got rid of in order to improve the standard of our herds. The only way by which we can determine which are producing satisfactory returns and which are not, is by keeping a record of the product. The milk of each cow must be weighed occasionally, and if you are manufacturing butter, the richness of the milk has to be determined by test. No farmer would consent to board two or three idle men at his expense, and yet he will consent to keep three or four cows that bring him no profit whatever on the food consumed. You might just as well have a tenant who is paying you no rent,—better, because you do not have to board the tenant. In driving through the country on Institute work, I often visit the farmers' barns, and I frequently see such cows occupying valuable stable room and eating their heads off. Every dairy farmer should have a standard of production for his cows. I do not think you are placing it too high if you require your cows to produce six thousand pounds of milk, as I know it can be done. I have a herd that has been graded up by degrees. Last year these cows gave me eight thousand pounds of milk on the average. Some of the grades have given me as much as pure-bred cows, and it is not necessary for the farmer to buy the latter. By the use of sires of the right type you can, in a few years, succeed in grading up a herd to a profitable standard. You must note the pedigree of the sire and see that the dams in that pedigree were good producers and free from defects. If the sire's mother had a defective udder or some defect in constitution, the chances are that a majority of the progeny of such a sire will have the same defects. The farther back you can trace a satisfactory record in the pedigree the more likely is the sire to give good results in your herd.

Heifers should be bred to calve at two and a half years old rather than at three years, as at the latter age they are apt to be a little too fleshy, which is a tendency to be avoided. After the first calving, they should not be allowed to calve again for eighteen months. Heifers should be handled as much as possible before they have their first calves, as you will then have much less difficulty in breaking them in to milking than will otherwise be the case.

As to the raising of the calf: in the first place it does not pay to raise a calf that is puny or weak. Given a vigorous calf at the start, it must be fed in such a way as to produce a strong, robust frame, so that it may have the capacity to consume and digest large quantities of the coarser kinds of feed, which is as essential to profitable dairying as it is in profitable beef production. You can spoil the best calf by feeding it improperly when young. The calf should not be starved, neither should it be allowed to get fat. It is not necessary for me to say much about the feeding of the calf. We find that oil meal, whole oats and skim-milk make an excellent ration. I would not recommend corn, as it tends to fat production. For the first two weeks we give our calves whole milk fresh from the cow. After that time they are gradually weaned on to skim milk. By the time they are four weeks old they will begin to eat a little grain or chop and some clover hay. Never feed milk that is cold or sour. It is a bad practice to mix raw grain in the milk, as it is almost sure to induce scours. Meal should be fed dry or thoroughly cooked. Do not allow calves to run on pasture in the day time during the summer, as the flies and heat will do them more harm than will be offset by the good apparent from the exercise. A little run at night is all right if you have the necessary fence, but we never let calves out of the pen the first summer.

No matter how carefully you may follow the plan outlined for grading up your herd, you must not suppose that good returns will be secured in the way of milk if you do not feed your cows sufficiently. Many men make the mistake of not feeding liberally enough. The cow can produce milk only from the food she eats, and the more you can get her to consume and digest, the more money you will make out of her.

The final test of the dairy cow is the scale and Babcock test. In starting out to purchase foundation stock, you have to be guided by conformation as you have no opportunity for testing each cow. Such a cow should have a good udder, with the teats well placed and fairly well developed. She should have a good skin with a coat of silky hair, as that indicates good digestive capacity. The ribs should be well sprung and wide apart, showing good capacity for food consumption. She should be broad in the brisket and have a general wedge shape, with a long, slim neck. Such a cow is likely to prove satisfactory unless she has been spoiled by bad handling.

ERLAND LEE, Stony Creek: Dairying is a secondary consideration on my farm, but we are engaged in butter making to a small extent. One point that Mr. Stevenson did not touch upon was, the necessity for kind treatment. I think this is very important, because, unless you secure the confidence of a calf by your treatment of it, you will not obtain satisfactory results. If you once scare a calf thoroughly, it will never quite overcome it. The reason why calves become unthrifty in many cases is because the farmer neglects them for other work, the pens are not kept clean, nor are the pails from which they are fed. In warm weather this is an important matter, and the pails you feed from should be as clean as the pails you milk in. Another reason for unthriftiness is because no attention is paid to feeding milk always at the same temperature. In the morning, perhaps, the skim milk is at ninety degrees, while at night it is quite cold. Regularity in feeding is also necessary. The pens should be clean, warm and light. In considering the pedigree of the sire, I think it is very important to know the pedigrees of the grand sire and grand dam, as they have a very important bearing on the usefulness of the animal. Some years ago I obtained a male animal that had won a high place in the show ring and whose dam was one of the best cows in Canada. Not one of his calves turned out to be worth keeping, as I found

out to my loss four or five years after. The reason was that the grand dam of this animal was an ordinary cow, and the heifers raised reverted to her. Attention to this matter of ancestry will mean far better herds and more money in our pockets.

Q.—What breed does Mr. Stevenson's herd represent?

MR. STEVENSON: I am not here to boom any breed, but may say that I am a breeder of Holsteins.

Q.—Do you find their milk as rich in fat as that of some other breeds?

A.—I have never kept any other breed. We dispose of our milk by wholesale in the City of Hamilton. It has tested as high as 4.20 and never below 3.60 for the average milk, according to the test of the Milk Inspector for that city.

Q.—Describe in detail the points of a good dairy cow?

A.—I do not think it necessary to lay stress on minor details. The man who has weighed his milk for five or six years does not care whether the horns of his animals are long or short, or as to the length of the tail. He cares for nothing but the weight of the milk produced; that is the chief, if not the only, point that directs our efforts in building up a good herd of dairy cattle.

Q.—Is the amount of butter fat hereditary?

A.—I am not a scientific man, but I have always been of the opinion that it is. If a cow has a tendency to produce rich milk, her calf will probably have the same tendency.

Q.—Can you increase the percentage of butter fat by feeding?

A.—Not to any appreciable extent. If a cow has a capacity to produce milk of a certain richness, she will keep pretty close to that no matter what she is fed. You may of course by feeding increase the flow of milk.

Q.—How long do you allow your cows to remain dry?

A.—About two months. I do not think they need any more rest than that. Some of our cows have practically never been dry, but I prefer to have them dry for the time stated. Many farmers make the mistake of starving their cows while they are dry. This is the period when their strength should be built up by liberal feeding.

Q.—Do you ever have cows that are not allowed to go dry affected with milk fever?

A.—I have never had a case. Care is all that is required to prevent it, by seeing that the cow's system is in good condition previous to calving.

Q.—How many cows do you milk?

A.—About twenty. We are increasing our herd, but we have to breed the cows, as it is very difficult to buy good ones.

Q.—Is not a cow that is well fed while dry more subject to milk fever than one that is fed lighter?

A.—She should not be allowed to get in too high condition.

Q.—If you buy a cow and do not know her pedigree, would you buy her according to her points?

A.—I should have to buy her on that basis.

Q.—Do you feed any stock foods?

A.—No. I have fed a little, and they may be all right, but I find that if cows are allowed a regular supply of salt and are looked after properly in that way, they do not require stock foods.

Q.—Do you feed much bran?

A.—We feed a good deal. Cows are very fond of it, and I have great faith in it as a food for dairy cattle.

Q.—Do you feed oil cake?

A.—When it is cheap enough. It is about \$35 a ton now, and we consider it too dear to feed except to young calves.

Q.—How do you feed it to calves?

A.—We scald it with hot water for very young calves, but after they are a month old we feed it dry.

Q.—Do you feed it to take the place of butter fat in skim milk?

A.—Yes.

Q.—Do you prefer oil cake to linseed meal (that is with the oil pressed out) for calves?

A.—We prefer oil cake.

Q.—I find that calves fed oil cake are less subject to scours.

Q.—Will not oats and bran mixed serve the purpose just as well as scalded oil cake?

A.—We feed oats and bran, too, but we start with oil cake; you cannot mix grain with milk but you can oil cake.

TREATMENT OF MILK FEVER AND OTHER UDDER AFFECTIONS IN COWS.

By DR. R. BARNES, ASSISTANT SECRETARY ONTARIO VETERINARY MEDICAL ASSOCIATION, LONDON, ONT.

I desire to express my appreciation of the honor done me in being asked to address such a meeting as this, composed as it is of men engaged in one of the most important branches of Live Stock Husbandry. I feel that a new era is dawning for the veterinarian, that his work is being appreciated, that his services and advice are being sought after. This should be so, for the veterinarian and the stock-breeder are co-workers, and if we wish to bring and keep to the front that branch, it requires the brains and skill of both, the one to study out and develop the particular form and quality demanded, the other to understand and combat the diseases which affect live stock. I regard this occasion as much of a compliment to my profession as to myself, and I hope that my effort to-night may repay you for your time spent in listening to me.

It is my intention to devote my time to-night more particularly to the causes and symptoms of milk-fever and affections of udders in cows, than to treatment. While I may give you lines of general treatment, yet, it is impossible for any veterinarian to lay down a hard and fast line of treatment for any disease, as under different conditions and surroundings, treatment is so very different that it requires skill and practical knowledge in its application, which but proves that in any branch a man's success, is to a very great extent, dependent upon his ability to apply that which he has read or been told.

The disease which we will first consider is one that, until the last few years, was perhaps the most fatal that the dairyman had to deal with. It is commonly called *Milk Fever*, is also known as *Parturient Apoplexy*, *Dropping after Calving*, and is now called *Parturient Intoxicosis*, and if the name be taken as a means of identifying its pathology, I think the last one, *Parturient Intoxicosis*, comes nearer than any of the others. This disease has been known ever since veterinary medicine became a science, and many have been the theories advanced as to its pathology, and even at the present time it is a subject of dispute and much controversy. The theory at the present time

most generally accepted is that during the later stages of pregnancy, the udder is thrown into a stage of inactivity. The blood of the cow owing to the development of the calf, becomes loaded with a large amount of nutritive as well as waste material, and the red blood corpuscles become diminished in size and number. When parturition takes place, a large amount of the blood is suddenly conveyed to the udder. This sudden change may cause congestion of that organ, and consequent derangement of the secretory cells, this combined with the effete fluid, always to be found in the udder of cows at the second and third calving, gives rise to the formation of a poisonous product, which, absorbed into the system, produces the characteristic symptoms. The effete fluid which I mentioned as being a factor in the cause of this disease, is an opinion of my own, which I will explain later on.

This disease is most liable to affect fat, heavy, milking cows. It was at one time thought that it was seen only in hot weather, but such is not the case, although I am of the opinion that extremely hot weather renders the cow more liable. It is known in all countries where the dairy cow is developed, is seen oftenest about the third, fourth and fifth calving, very rarely after second calving, and there is not a case that I am aware of, or can I find any authority of where it is recorded that it ever followed the first calf. It is right here that I get my ground for the belief that the effete fluid in the udder plays an important part in producing this disease. We must admit, if we believe the pathology of this disease, that there are certain conditions necessary before this disease can be produced, namely:—

(1) The particular condition of the animal at the time of parturition;

(2) The act of parturition; for this disease is seen only at that time, and the heifer is exactly, in this respect, in the same condition as the mature cow, with the exception of the udder, which has never been in active use previously. If you have ever been in a slaughter house when a cow was killed and noticed the udder removed, you could not fail to see a varying amount of yellow foetid serum. You will find this in different quantities according to the manner in which the animal was cared for when drying, and the longer dry, the more foetid is the fluid, and we know for a fact that the longer a cow is dry, the more susceptible she is to milk fever. My deduction is that this is a factor in the production of this disease, for the heifer is subject to all the other conditions which produce it and yet she never takes it.

The symptoms are characteristic, and anyone who has ever had any experience with this ailment has not the slightest difficulty in recognizing it. Sometimes the symptoms are tardy in showing themselves, twelve to sixteen hours being required until a positive diagnosis can be made. In other cases they are rapid. Cases have been known where death followed three hours after the first symptom was noticed. This is one of the diseases where delay is dangerous.

The first symptom that may be noticed is a peculiar stary condition of the eye, which may be seen a considerable time before any other symptom is manifest. The patient then becomes restless, raises hind feet alternately, breathes rather quickly, is unwilling to move, and staggers during progression, appetite and rumination cease, the animal gradually gets worse until all power is lost, and then lies helpless, head to side, eyes amaurotic and insensible to touch. The patient is now either comatose or delirious, and unless relief is speedily obtained, the patient goes from bad to worse until death ensues.

Treatment: To my mind there is but one treatment, and that is oxygen or sterilized air, and it administered by a veterinarian. The question may be asked, why oxygen or sterilized air? Simply because its results have been away above all other treatments; and why administered by a veterinarian? Because complications may arise. These he knows how to treat, whereas the laymen would depend on oxygen or air. The result would in the latter instance be contrary to expectation, and the treatment would be condemned. Out of over one hundred cases which we have treated, all but three made complete recoveries. One died with pneumonia; the other two with septic metritis; but even these three recovered of milk fever. Of late a great deal has been said and written of air injected with a bicycle pump. This may do, but I should be very much afraid of septic infection in the udder. I consider the danger so great that I should be afraid to try it, and the chances of curing septic infection would be less than that of milk fever. The air in stables is anything but pure. Air contains but twenty per cent. of oxygen; yet the other gases would do to produce pressure within the udder, which is an important part in the cure of this disease, which I will allude to in the prevention of this condition, and that is what you are perhaps most interested in. While there are no positive preventive measures, there are certain conditions which, if carried out, will no doubt be the means of lessening the severity of the attack if not totally preventing it as follows:

(1) Have the animal in the best possible state of health;

(2) Place on a laxative diet with plenty of exercise;

(3) As this is a disease of domestication, go back to the conditions of the cow in her wild state. As the act of parturition approaches, some quiet spot is selected, and there she gives birth to her young. For the next few days she eats but very little, so intent is she watching lest harm come to her calf. Unless water is close by, she does not get any great amount, and there is not an ambitious owner at hand with a sixteen quart pail to see if she will fill it that he may tell neighbors what a wonderful cow he has and when he takes them round to see this wonderful cow, he finds her down with milk fever. No, she goes along for a few days, the calf taking very little milk, and milk fever is unknown on the range. Statistics kept from over two hundred cases show that the great majority had been milked out dry as soon as seen after calving. The cases that had not been milked dry had slight attacks, some so slight that it would require a veterinarian to diagnose it. While this does not prove conclusively that milk fever can be prevented in this manner, still it has very much in its favor; and while not altogether preventing it, it certainly lessens the severity of the attack, and why? We know that a certain amount of pressure is a good stimulant, and by the removal of all the milk, pressure is removed and a state of collapse of the udder is produced. Inactivity is good ground for the development of chemical or bacterial changes, which rapidly take place and produce the disease.

How does oxygen or sterilized air cure? First, by arresting the changes which are going on in the udder; then, by compelling, as it were, the red blood corpuscles to take on more oxygen than they voluntarily do in the lungs, thereby increasing the alternative power of the blood; and third, by pressure on the secreting cells of the udder, bringing them to a healthy and vigorous condition.

Mammitis. The next disease is one of the udder primarily, but which very soon produces constitutional disturbances, and if neglected, very often terminates fatally. I refer to Mammitis, which may be simple or contagious.

I will refer first to the simple form most commonly seen, which at first is but inflammation of the glands, and may be produced by exposure to cold or wet, standing in a draft, sudden changes of temperature, over-feeding on rich albuminous foods, improper milking, indigestion, in fact any disturbance with the general health is very apt to affect the udder.

The symptoms vary with the cause, but generally you will find more or less shivering, cold extremities, general erection of the hair, swelling and heat in one or more quarters of the udder, hot dry muzzle, temperature elevated, pulse quickened, breathing excited, appetite and rumination more or less suspended, costiveness, suppression of urine, a lessened yield of milk, difficulty in moving, and distinct lameness. If but one side of the udder is affected, milk is replaced by a watery fluid sometimes tinged with blood, which later becomes white and purulent and of an offensive odor.

Recovery may take place in from three days to a week, or death as quickly as twenty-four hours. Although recovery may take place, there are some very nasty complications, such as induration abscesses and gangrene.

Treatment: The treatment I can give you is but general, and it will not prove satisfactory in a great many cases, as symptoms must be combatted as they appear, and that is the work of the veterinarian; and in this very disease is where the veterinarian comes in for a great deal of unjust censure. as in ninety per cent. of the cases where he is called, it is not until it is too late to prevent some unfavorable termination, and then he is very often consoled by having either owner or neighbor tell him that they cured a far worse case by just rubbing it with goose oil, smartweed tea, etc. The treatment is as follows: First, get the patient warm by clothing, alcoholic drenches, hot salt, etc. Give a dose of laxative medicine as epsom salts, a febrifuge, as nitrate of potash. If depressed, continue stimulants, support udder, which can be done by fastening a sheet under the udder, supported by a surcingle in front, and passing the sheet under and up the back of the udder and fastening the ends of sheet to the surcingle in front of hips which can be easily done by dividing sheet and putting one part on each side of tail. Holes can be cut in the sheet for teats so as not to interfere with the drawing off of the milk. Apply hot fomentations to the udder. This may be done nicely by packing between the udder and the bandage such as spent hops, which hold moisture and heat. Rub udder with camphorated liniment or belladonna oil, remove milk frequently. This, in mild cases, will often effect a cure; but if symptoms do not become relieved in three or four days, an abscess may form, and then your energies must be doubled to bring it to a state that it may be opened and the sack washed out with an antiseptic solution. If you find that with all this, you are making no headway, you will possibly have gangrene. Large doses of hyposulphite of soda should be given and the gangrenous part removed. This is easier said than done, and do not be disappointed if, even long before you have reached this stage, in spite of your work and treatment, your patient dies.

There is another condition I forgot to mention, which may occur before the formation of the abscess or gangrene, that is induration of the gland. In this the symptoms all subside; the cow apparently regains her usual good health; but one or more quarters remain hardened and inactive. Different lines of treatment for this have been recommended; but my experience is that it is just as well to leave it alone.

The contagious form presents the same general symptoms as the simple form, usually not so severe. The chief difference, whereby it is comparatively easy to distinguish the two, is in the character of the swelling of the

udder. In this case it is deep seated, hard, nodular swellings, and its cause is dependent upon some local bacillus. Hence the greatest care should be exercised by those doing the milking, that they do not first affect the cow, and then transmit it from one to the other. A form of this appeared in Pomerania in 1875, and was investigated by Damman, who called it of a diphtheritic nature, and believed that it was identical with a similar outbreak in children at the same time. Scarletina has been supposed to be transmitted by this source. Another form, which is often encountered in large dairies starts as a sore or swelling at the end of the teats extends up to the ducts to the structure of the gland and produces its characteristic symptoms. Another form, very prevalent in central New York in 1889, broke out on the teats and udder as blisters strongly resembling cow-pox, but was not propagated when inoculated on calves. It will be seen that contagious mammitis is not due to one particular bacillus but to a number. Prevention of this ailment is most important. See that the newly purchased cow comes from a healthy herd. Let her be milked by one person who does not milk any other cows, keep her in a separate stall. If any cow presents an abraded or indurated teat, isolate her. Let her stall be cleaned and disinfected before being used. No cow which retained after-birth, vaginal or uterine discharges, or pus discharging sores should be kept in the same stable, and anyone who milks these affected cows should not milk others. Attendants who have been handling putrid or offensive articles should not be allowed to milk until their hands, arms and clothing have been washed in an antiseptic solution.

The general treatment of contagious mammitis is the same as that of the simple form except that antiseptics should be given and applied.

Another condition that is of the greatest importance to general health, and more particularly that of children, is tubercular affection of the udder. This, in its early stages, may be somewhat difficult to diagnose. Therefore it is very necessary that the milk from a cow suffering from even the slightest derangement of the udder should not be used for human consumption, for who of us would want to be the means of producing in some helpless infant, the White Plague. Professor Law gives certain symptoms which will help you to make a fairly correct diagnosis. It is usually a rather firm, uniform, painless swelling of one or more quarters, usually the hind ones, which at first does not interfere with milk secretion; as the disease advances there follows an irregular knotted condition; pale watery milk, semi-coagulated; finally, induration of the gland. The glands in front and behind are affected.

The treatment for this is, get the animal under six feet of earth as quickly as possible, for there it will do no harm.

Variola Vaccinae,—*Cow-pox*. The constitutional symptoms are usually very slight, in many cases being entirely unnoticed. Small nodules appear on the teats and udder, which rapidly increase in size and in their centre present a depressed bluish white portion, surrounded by a reddish margin, gradually shading off to the white skin. If these are left unbroken, they assume a brownish shade in the centre which extends to the outside and gradually dries up and forms a crust or scab. About the twentieth day from commencement, the crust falls off, the skin is pale and shows the characteristic pit. This may occur on the udder, but on the teat they are usually broken by the milker, and unless great care is exercised, may form troublesome sores and even mammitis. If the milker has not been vaccinated, he is liable to contract the disease. It is not contagious from cow to cow unless

by direct contact as the hands of the milker. It is a mild affection, does not endanger life, but may diminish the supply of milk principally by not being able to remove the milk properly.

Treatment consist chiefly in care in milking; avoid rupture of pustules if possible; wash sores with a mild antiseptic.

Chapped Teats. This condition may be caused by anything that irritates them, as cold, wet, mud, sucking of the calf. The affection may be very slight or, if neglected, it may cause great gaping sores, resulting in retention of the milk and mammitis.

Treatment: Remove the cause, applications of carbolized vaseline, or equal parts of spermaceti and almond oil. If sores are tardy in healing, a solution of nitrate of silver may be applied.

Warts on Teats: Not serious but troublesome; may be removed, and caustic applied to prevent growth, and pure olive oil applied after each milking.

Caesin or Calculus may form and become lodged in teat tube. Inject small quantity of oil, and manipulation will usually force them out. If this fails use a spring dilator. If you still find it impossible to remove it, an operation is necessary.

Thickening of the membrane and closure of the duct: This is the result of inflammation extending from without, inward. It may be limited, or extend the full length of the teat; the streams of milk become finer and finer until it ceases altogether, and a firm cord is felt along the course of the duct. A dilator may be used, or a concealed bistoury.

Closure of the milk duct by a membrane. This is a constriction at one point without thickening, and usually occurs when the cow is dry. A syphon may be passed of different sizes and the constriction sufficiently dilated as to cause no further bother, and if not, the hidden bistoury may be used.

Teats blocked by a warty or other growth inside. Freidberger and Frohner attribute this condition to a vegetable parasite which gains entrance to the teat tube from the outside. They claim that milk from cows so affected is not fit for human consumption. Treatment for this condition, as described by other writers, is in the removal of the growth.

In referring to the last four conditions I have mentioned the use of the bistoury. The details of the operation, if I were to give them, would sound simple, and it looks like a nice operation. A great many veterinarians report that they have operated with success, but my own experience has been something the same as the French surgeon who was advocating a certain operation, and when questioned as to the results, replied. "Very remunerative; a beautiful operation; very seldom successful." Consequently my advice to my clients has been, dry the portion of the udder affected as quickly as possible, and prepare the animal for the block. If an animal so affected is of some particular strain or breed that the owner is very anxious to breed again, try the operation; but my success has been such that I am compelled to advise the block.

Fistula. Another condition is fistula or opening of the side of the teat, caused by wounds. The treatment is to scarify the edges of the fistula, or better to dissect out of the skin, close the wound with stitches, and cover with collodion. This is comparatively easy and successful, if performed when the cow is dry.

I think I have mentioned the principal affections of the udder, and endeavored to give you some light on their nature. There may be some conditions that I have missed, if so, I shall be pleased to answer any questions regarding them.

There are four other conditions which are not particularly diseases of the udder, but which may be included, namely, *Blue Milk*. Watered milk is blue, but the presence of a germ (bacillus cyanogenus) causes a distinct blue shade even in rich milk and cream. It may enter the milk after it is drawn, or may find its way into the opening of the milk ducts and enter the milk as it is drawn. If it is in the milk duct, frequent milking and the injection of a mild antiseptic is all that is necessary.

Stringy Milk. This is developed by a fungus, and that spores are present in the system of the cow may be safely inferred from the fact that, in a large herd, two or three cows may be affected, they recover, and others are affected. It is supposed to be caused by the character of the drinking water. Change the water, and give two drams of bisulphate of soda daily.

Bloody milk may result from any of the causes which produce mammitis and tuberculosis, or from eating irritant plants. You may have a reddish tinge or sediment when logwood is eaten. Milk that turns red after it is drawn may be due to the micrococcus prodigissus.

Treatment will vary with the cause. A light laxative and febrifuge are recommended, as for mammitis. Bathe the udder and apply camphorated ointment. If from food, reduce it; if from irritant plants, change the pasture, and be careful when milking.

Suppression of milk may result from ill health, debility, emaciation, chronic disease of the udder, washing of the gland, insufficient food; and sometimes it will occur suddenly without any apparent cause. *Treatment*: Remove the cause, and feed on rich albuminous food, give ounce doses of anise or fennel, rub and strip the udder, and the application of oil of lavender or turpentine will sometimes be beneficial.

This is about all I have to say to you on this subject to-night. I thank you kindly for the very patient manner in which you have listened to me. If I have been able to give you sufficient light on these affections that you, in future may guard against any possible danger to the health of man by consumption of milk, or that it may lessen the suffering of that most useful and profitable animal, the dairy cow, I shall feel amply repaid.

Q.—How do you sterilize air for treating milk fever?

A.—By passing it through an antiseptic solution.

Q.—Are cows more susceptible to milk fever in summer than in winter?

A.—Extreme heat may be a predisposing cause; but we also have it in winter time.

Q.—Does a cow ever have milk fever before dropping her calf?

Q.—Yes, but only in cases where she has been milked previous to calving. Do not touch the udder before the cow calves; nor should she be milked until three or four days have elapsed after calving. Even then she should not be milked dry for the first few milkings.

Q.—I cured three cows of milk fever by using a bicycle pump?

A.—In the absence of a veterinary surgeon or sterilized air, a pump is the next best thing.

GENERAL OBSERVATIONS ON THE DAIRY INDUSTRY IN DENMARK WITH SPECIAL REFERENCE TO THE CO-OPERATIVE TESTING ASSOCIATIONS.

By H. H. DEAN, PROFESSOR OF DAIRY HUSBANDRY, O. A. C. GUELPH.

In visiting Denmark, one cannot but be struck by the fact that the farmers there have developed co-operation to an extent we know nothing

about in this country and our farmers have much to learn from them as to the value of co-operation. They have co-operative bacon establishments, egg establishments, cow-testing associations, etc. Another outstanding feature is the economy with which they conduct their operations. This is particularly the fact in connection with their bacon-curing establishments. Only in the best American establishments do they make use of every part of the hog, whereas, in Denmark, this is universal. In 1905, that small country with an area of 15,000 square miles as compared with Ontario with 200,000 square miles, sent to England 41 per cent. of the butter imported by that country. They have not nearly the same opportunities for developing agriculture as we have, as their country is very much cut up, and there must be great difficulties in transportation, especially in winter time. The population is about two millions, as compared with two and one-half millions in Ontario.

In 1895 the farmers there decided that they were not getting as much from their cows as they believed should be the case. They therefore resorted to the plan of forming cow-testing associations. The Dominion Department of Agriculture published recently a bulletin in which is given in concise form the results of that work, and it should be read by all who are interested in the subject. In the present year, ten years after the associations were started, they have at least one testing association for every parish in the country. The bulletin I refer to states that the Government grants them about \$32,000, which is divided among them according to membership. My understanding of the matter was that no grant was given except to men who make a specialty of raising breeding animals, which are sold to the farmers at reduced prices. I may be wrong as to this, however, owing to my unfamiliarity with the language. The testing associations have been developed by the farmers themselves, who manage them and who hire men to do the testing. Usually fifteen or twenty farmers club together and hire a man who is, as a rule, a graduate of an Agricultural College or Dairy School. This man visits their farms once a week or once in two weeks, weighs the milk from each cow, takes samples and tests them for fat. Besides this, he advises the farmers and assists them in every way possible. For this work he is paid about \$125 a year with board and expenses.

In adapting the work to the requirements of this Province, in my judgment, the work should begin with the men who are raising pure-bred dairy stock, for the reason that the improvement of our dairy cattle can come only through the use of pure-bred sires. There is no way by which a man can improve his herd so surely and so rapidly as by the use of pure-bred sires. Unfortunately, at the present time, it is impossible (except among Holsteins, where they have some limited records) in buying such animals to ascertain the record of their ancestors as milk producers. Tests of this kind, to be of real value, should run throughout the year, as short tests do not give sufficient data on which to base an accurate opinion. There should be an officer to superintend the work, who would take samples of milk and test them. Prizes might be offered for the best producers, as the test conducted at this show does not cover the ground for a sufficient length of time. I understand that the Dominion Department is about to institute a system of "record of merit" among the breeders of pure-bred dairy stock, and doubtless the Province could assist with advantage in getting the work on a satisfactory basis. I believe it is of the greatest importance that every man who keeps cows, and especially breeders of pure-bred stock, should keep systematic records. All that is required is a book with one page for each cow's record for the year. The milk is weighed as often as is decided upon and a corresponding entry made. A sample of the milk is taken every day or

stated periods each month, and tested for butter fat, the result of which test is also entered. The feed is also weighed as often as is necessary, and a sheet is kept showing the total amount of food consumed by each animal. The work does not take very much time and it leads to practical results. We follow this system in the College herd. During the past year we found that our best cow gave over ten thousand pounds of milk and over four hundred pounds of butter, while the poorest gave three thousand pounds of milk and about two hundred pounds of butter. There is just as much comparative difference among the average cows of the country. This system of record enables the dairyman to weed out unprofitable cows, and without it, he has no sure basis on which to work. He must not expect to revolutionize the capacity of his herd in one year. The improvement in the yield of milk and butter will be slow, but it will be sure. It is a great advantage to have a systematic record of what our individual cows are doing. Our best cow gave a profit of \$130 and the poorest of only \$25 to \$30. In the improvement of dairy herds by the use of pure-bred sires, the fact is very generally lost sight of that the dairy qualities of the heifer raised are inherited chiefly from the male parent. Many a time a good cow will raise only a poor or indifferent heifer because sufficient attention has not been paid to this point. Following the method I have outlined, we may expect to see a great improvement in the dairy herds of this country, with the results that they will bring more money to their owners and afford more comfort and happiness to the farmer and his family. The farmers of this country are hard working, as I know from practical experience. They economize as no other class of people do, and they do not make more than a fair living. There are many reasons why this is the case. One of them is that our cows are not as profitable animals as they should be, and the only way to remedy this is to weigh and test the milk, and have some form of association or record so that they may know what individual cows are doing. The result will be marked improvement in the dairy industry of this country.

GEO. H. BARR, Superintendent, Western Dairy School, Strathroy: During the past year the Dairy Commissioner for the Dominion conducted several herd tests in Ontario and Quebec. The county of Oxford is one of the best dairy sections we have in Western Ontario, and where there are probably more real good herds of dairy cows than in any other section in Canada. I have the results of a test made in the Ingersoll district, covering 30 days. It included sixteen herds with a total of 240 cows. The average production per cow for thirty days was 914 pounds of milk, testing 3.4 per cent. fat. The smallest amount of milk from any one cow in thirty days was 425 pounds; another cow in the same herd gave 1,365 pounds in the same time. The largest amount of milk from any one cow was 1,420 pounds, this cow belonged to a herd of eight cows, the poorest of which gave 730 pounds. If such a wide difference exists between the cows in one of our best dairy sections, what are we likely to find in far poorer dairy sections. I believe there is nothing that will make more money for our dairymen than to have some system of testing their herds. I understand that next year a method is to be introduced by the Department at Ottawa by which this can easily be done, and I hope that many dairymen will adopt it.

One of the things that struck me forcibly in connection with the test referred to was that the herds giving the smallest quantity of milk gave the lowest testing milk. In the herd that gave the highest yield of milk, the highest test was 4.9 and the lowest 3.3. In the herd that gave the smallest yield the highest test was 4 per cent. and the lowest 2.3 per cent.

I hear more grumbling from farmers in the butter producing sections in a day than I do in cheese sections in a month. The reason for this is, I think, as follows:—When a farmer goes into the creamery business, it is because he wants to raise stockers and feed them for beef, and yet make money out of the cow in addition. It is all very well to talk about improving our herds, but how is this to be done when sires of the beef type are used. This, it appears to me, is a practical point and one that is worthy of careful consideration. I think it is incumbent on our Shorthorn breeders that they should pay more attention to the milking qualities of the breed. Very few of them are, to-day, paying any attention to the matter. The condition in the butter producing sections, of which two-thirds of Western Ontario consists, is that the average farmer, engaged in mixed farming, wants a cow that will give a good yield of milk, and at the same time raise a calf which will be profitable for feeding as a steer. At the present time it is safe to say that the better the breeding of a herd of Shorthorn cows, the less milk will they produce and the less money they will bring in, because the increase of beef in the steer will not make up for loss of milk in the cow. We require from our breeders a class of Shorthorns which will give better milk producing cows. In the cheese sections, dairymen do not care anything about the calves and they can go to the dairy breeders for a good sire, whereas this course would result in disaster in the beef-raising sections.

PROF. DEAN: When in England last summer I saw several herds of Shorthorns which had first-class records as milk producers. In one herd the record last year was from six to twelve thousand pounds of milk. I understand there is an agitation on foot at the present time to start a herd book of milking Shorthorns in that country. Any man who imports such cattle to this country will make a fortune. There are such cows in the old country, but they are difficult to find either in Canada or in the United States.

Q.—Of what type are these cows?

PROF. DEAN: They are big, strong animals, weighing from twelve to fourteen hundred, and, if allowed to go dry, they would make beef rapidly. The cow with the record of twelve thousand pounds to which I refer was a cow of the beef type according to our standard. Personally, I am not a strong believer in what is called "dairy type."

Q.—Would it be of any use to bring these animals to this country unless we had a record for them?

A.—A record would, of course, be desirable.

SELECTING DAIRY COWS.

By H. H. DEAN, PROFESSOR OF DAIRYING, O.A.C., GUELPH.

There are no sure and outward signs of a good dairy cow. The only sure way of deciding as to the value of the cow for dairy purposes is by the scriptural method of "by their fruits ye shall know them." We like, if we are judging pure-bred cows, to observe first that the animal is typical of the breed she represents. If she is of no particular breed, we do not need to pay much attention to what are sometimes called fancy points. In the dairy cow the chief thing we look for is ability to produce milk; if she cannot do that economically, she is of no use to us as dairymen. It is a very difficult thing to judge as to this from her outward characteristics, because the secretion or

the making of milk is a mystery as great and deep as life itself. However, there are certain points that we generally look for when we are purchasing a dairy cow. The cow we have before us is the champion in the dairy test at this show. In determining the standard of the cows in this test, no scale of points is used as in judging beef animals, and man's ideas and theories have nothing whatever to do with the decision reached. The cow's milk is weighed, samples are taken and tested for fat, and at the end of the test, which lasts for forty-eight hours, we know exactly what each cow has produced; and it is as accurate as is possible to have it in a competition of this kind.

Turning to the cow itself, the first thing to observe, leaving out the question of breed, is as to the healthy condition of the animal, and in this connection the same principles apply as in judging a beef animal. The practical dairyman should be able to walk through the stable and pick out without hesitation any cow that is in an unthrifty condition. If the hair be harsh and dry, it is an indication that something is wrong with the health of the animal. The skin should be soft and mellow, not thick or hard. The practised hand can readily tell whether the skin is being properly nourished by the blood or not. The reason why the poor condition of the hair and skin is the first indication of lack of health is because these parts of the animal are farthest from the heart, and consequently they are the first to be affected by poor nutrition and circulation. Just as soon as your hair and skin become hard and dry, you may be sure you are not thriving well, and it is the same with a cow.

Next we examine the region of the heart and lungs. Lack of development there may indicate predisposition to tuberculosis. The breathing of the animal should be easy and regular, not in short gasps. It is a good plan to apply the ear to the animal's side and if there is a rasping sound in the breathing, you may be sure that there is something wrong with its lungs. Some lay considerable stress on the size of the nostril, and in my opinion a cow with a large nostril is more likely to be healthy than one where the aperture is small. This, however, is only a minor indication.

The second thing we look for in a good dairy cow is capacity to make use of a large amount of food. Some look for a cow that eats a small amount of food and gives a large amount of milk, but no such combination ever existed. The cow that gives a large quantity of milk must, of necessity, eat a large quantity of food, and the size of the barrel indicates to a great extent the capacity of the cow to make use of food by converting it into blood and afterwards into milk. A cow with a small barrel usually lacks capacity in this respect. We next look for the indications that would lead one to expect a large production of milk, but these are by no means infallible. We like to see a cow with a large udder. Many good judges say that the udder is no indication of dairy qualities. With such I do not agree. The horseman's motto is "no foot, no horse," and, in my judgment, the dairyman's motto should be "no udder, no cow." If the udder is of small capacity, it is an almost sure indication that the cow will not be a large milker; but, on the other hand, it is not always true that cows with large udders are large milkers. I never saw a large milker that had not a well developed udder. I like to see the udder come well forward, and it should be well filled out. A great many cows are weak in the fore-udder. Physicians explain that this is due to the fact that the blood enters the udder from the hind part and therefore the forward part is not so well nourished. I like the teats to be of good size, evenly and squarely placed. A great many lay great stress on the

milk veins. The milk veins, so called, are not really milk veins, but simply convey the venous or impure blood from the udder back to the heart and lungs; no milk enters them. They should be well developed because they indicate a large flow of blood to the udder. At one time a great deal of stress was laid upon the escutcheon or milk mirror, many claiming to be able to tell from it the dairy qualities of the cow. This was known as Ginenon's theory. Personally, I do not think there is much in it, although some good judges still attach importance to it.

Q.—Did you ever see a good milk cow without a reasonably good escutcheon?

Prof. DEAN: No, you will usually find it associated with a good milker. Others again lay stress on the length of the cow's tail, claiming that the bone of the tail should reach to the hock; others lay great stress on the udder veins, and on such points as this, claiming that they are sure indications of capacity to produce milk.

Next we come to the fancy points. Here there is room for much difference of opinion. We like to see a cow with a fine head and clean cut below the eyes. A well-developed forehead indicates development of nervous power, and there should be good width between the eyes. The neck should be of medium length, neither too long nor too short; the shoulders should not be too prominent, and there should be sufficient development in that region to give ample room for the heart and lungs. The back should be comparatively straight, well developed at the hock points, and plenty of width at the pin-bones. Taken as a whole, a cow should possess the appearance of knowing what she has been bred for and for what purpose she is kept.

THE MOST PROFITABLE METHOD OF HANDLING BEEF CATTLE.

The subject "The Most Profitable Method of Handling Beef Cattle" was taken up as follows:—

- (a) "Raising Store Cattle."
- (b) "Buying Store Cattle and Finishing."
- (c) "Raising and Finishing Cattle."
- (d) "Summary."

(a) RAISING STORE CATTLE.

By D. ANDERSON, RUGBY.

The subject under discussion this afternoon is a very important one from the financial point of view. In the county of Wellington alone there were sold and slaughtered in 1904 cattle to the value of nearly two million dollars. The Statistical Yearbook of Canada shows that from the whole Dominion ten and a half million dollars worth of cattle were exported last year. The country west of the Great Lakes produced from thirty to thirty-five thousand head, valued at two and a half million dollars. Of the remaining eight and a half million dollars worth practically all went from Ontario, and mainly from that part of the Province lying west of Kingston. Taking the report of the Bureau of Industries, I find that there were sold and slaughtered in this Province in 1904, beef cattle to the value of twenty-six million dollars. If we deduct the value of the export cattle from that, there still remains a balance of about eighteen million dollars worth to be accounted for. What became of these cattle? The answer is found in the fact that Western

Ontario supplies practically the whole of Canada east of the great lakes with beef. The population of our larger towns and cities amounts to nearly a million, to say nothing of the smaller towns and villages, and I have estimated that about ten million dollars worth of our cattle go to supply this market in the shape of butcher's meat, and that the balance, eight million dollars worth, is consumed on the farms. Thus we see that the proceeds of the actual sale of Ontario cattle for 1904 for use off the farms amounted to eighteen million dollars.

I am down on the programme to speak to you about the breeding and feeding of store cattle. I have on my farm a good deal of comparatively rough land suited only for pasture, and under the circumstances in which I am placed, I find this a comparatively profitable line. If I had a better farm, I might decide to finish my animals ready for the butcher. To make a profit in this business, I find it necessary to be very careful, not only in breeding and feeding, but also in regard to the time of the year when my cattle are ready for sale. In the first place, I want, for the purpose of producing steers, a good big growthy cow weighing from twelve to fifteen hundred pounds, not of the extreme beef type, because the cow must produce enough milk to feed her own calf and also to give a good return in the shape of butter. Such a cow should have good width behind, good length of quarter, a well filled loin, a good spring of rib and smoothness of shoulder. When you stand in front and look at her, she would appear somewhat wider behind than in front. There are thousands of such cows in the Province. This cow should be mated with a bull of the extreme beef type. He should be short-legged, close to the ground, broad and thick, with a good spring of rib, giving a table back and a good loin. He should not have wide hook points or his top will be hard to cover with flesh. He should be just as smooth on top as it is possible to be, so that when he is in high condition a straight edge laid from the shoulder to the hooks will touch all the way along. He must be well let down on the hind flank; I never saw an animal that was good in this respect turn out to be a hard feeder and unthrifty. He must have a vigorous constitution, and must mature early, and it is very important that his frame work should be covered with a good covering of flesh.

No matter how good the bony structure or conformation may be, unless it is covered with a good depth of flesh, it will not be a profitable animal. An animal that has the right conformation may, by being given every attention, be fitted for the show ring, but that is not what I want. I want an animal, which, with fair feeding, will put on flesh. I want one that you cannot get in really poor condition without actually starving it.

I arrange so that my cows will calve between the middle of October and the middle of January, and I do not let a cow have her first calf until she is two years and nine months old. I find that a fall calf at twenty-three months will equal a spring calf at three years, and with good stable accommodation, we can grow them more profitably in winter than in summer. I never allow the cow to mother her calf. I remove the calf to the weaning pen as soon as possible, and feed it whole milk for two or three weeks. After that, for two or three weeks, I feed part whole and part skimmed milk, then skim milk to which some flax seed has been added. I find that under this system I can raise a calf that is just as heavy at twenty months as one that is not weaned until six months old. In preparing flax seed, I allow it to steep on the stove all afternoon and evening and the following morning it is brought just to the boiling point. I begin by feeding a good spoonful in the

milk and increase to one cupful. I believe that we feed our calves too much milk. A gallon of milk twice a day is sufficient for a three months old calf. Care must be taken to always feed the milk at the same temperature. If it is too hot or too cold or if the calf is given too much milk, scours will likely result. For this complaint the best remedy is to break an egg into the milk, shell and all. Calves for beef purposes cannot be raised to advantage in any part of the country where milk is being produced for the cheese factory. We must have skimmed milk for the calves and in this connection a separator is invaluable. The ideal condition is to separate the milk at the barn and immediately feed it to the young calves; then to send the butter-fat to a cream-gathering creamery. We do not feed milk in troughs but in clean pails. As soon as the calves are old enough, they are fed clover hay, pulped roots and a little crushed grain. In June the calves are put on good pasture, and while on pasture they are fed a little grain twice a day. The second winter, they are liberally fed on clover hay, oat straw, wheat chaff, turnips, and crushed grain. Sometimes some corn is fed. In the spring of the second year they are turned out on grass and by the end of October they are ready for sale.

How much will it have cost me to grow that calf? I leave the straw and the chaff out of the calculation because they are not saleable, and are more valuable to me after they have been converted into beef or manure than they are as straw and chaff. I value the turnips at six cents a bushel; the clover hay at six dollars a ton; the crushed grain at one cent a pound, and on this basis I figure that a calf at twenty-three months would cost me \$29 or \$30. I have no difficulty in making such a calf weigh 950 to 1,100 pounds at that age. My standard is to make a calf gain a pound and a half a day on the average. These calves will bring, when sold, \$40 apiece. That leaves a profit of ten dollars. In my estimate I have not counted in the cost of labor, as that is offset by the value of the manure. In this connection I claim that I am a manufacturer, manufacturing beef; but I differ from the manufacturer in the fact that I produce my own raw material. I make a profit on the raw material, after charging myself for it at the market price, by feeding it to these steers, of about \$10 per head.

But this is only one side of the matter, as I have indicated already. It does not pay to keep a cow for a year and give it nothing to do but to raise its calf. I therefore aim to make a profit out of my cows. The cost of carrying a cow through the year I put at \$29. Last year my cows gave me in butter from \$39 to \$40 each. I am of the opinion that every hundred acres of fairly good land in this Province (say sixty acres tillable, thirty somewhat rough, and ten bush) if worked intelligently, should produce a thousand dollars a year from calves and butter combined. This would be on the basis of keeping twelve cows and turning out twelve beef cattle. From eggs, poultry, fall wheat and other saleable articles another thousand dollars should be produced. Thus making \$2,000 the gross product of such a farm.

It should always be remembered that the growing time in the animal's life is the time at which to feed it, as at that period you will get one hundred per cent. more for the food consumed than you will at maturity. What has the average man in the past been doing? Carrying beef cattle over to three and four years old. They were put on grass in the summer and grew bone and put on flesh; in the winter they were not liberally fed, and they lost flesh but did not lose any bone. Next summer they were again put on grass and gained more flesh and grew more bone, with a corresponding loss of flesh in the winter. The result was that by the time they were three years old

they were great, coarse, rough, bony animals, which were wanted neither by the butcher nor the consumer. To-day there is a demand in our city markets for beef of the very best quality. When the consumer once tastes the best, he wants more of the same kind, and our aim should be to increase consumption.

The disadvantage of having spring calves is that they are turned out in the summer while they are being fed milk; in the autumn they are weaned and put on dry feed; the next summer they are put on grass, and in the fall of the year they are only eighteen months old, which is not old enough for the feeder. Calves that come six months earlier will weigh from 900 to 1,100 pounds, being two years old at the same time of year and many feeders would sooner have animals of that kind than those a year older.

Q.—How do you keep up the milking qualities of your cows if bulls of the extreme beef type are used?

Mr. ANDERSON: I select my heifers carefully with reference to their milk-producing qualities. If a young cow fails to give a proper return in milk, I send her to the butcher. From cows of the kind I have mentioned, I am able to secure two or three heifers every year that are like their dams. I have to admit, however, that as years go by, my cows tend more to the beef type.

Q.—How do you find the sale for heifers in the fall?

A.—We sometimes have two or three to turn off in the fall, and, if well fed, they find a ready sale as Christmas beef. I never fatten a cow for the market, if I can help it, as cow beef does not sell very high, and there is no money in doing so. I usually keep a cow till she is about nine years old, and sell her to a man who is producing milk near some city. He feeds her well and milks her for eight or nine months; then fattens her and sells her to the butcher, and from the proceeds he gets enough to buy another cow.

Q.—Do you think that a cow should be milked perfectly dry the first milking?

A.—I think it is better not to.

Q.—Is it not a fact that a heifer which gives poor returns the first year may afterwards turn out to be a good cow?

A.—Yes, if we have a heifer from a cow that has a good record, we give her every chance to see what she will do.

Q.—Do you ever raise two calves on one cow?

Why should it be harder on the cow to raise two calves than to be milked twice a day?

A.—If the cows are kept in the stable and the calves turned in, I do not think there would be much difference. But too many allow their calves to run in the pasture with the cows, which is a mistake, even if there is only one calf to a cow.

*(b) BUYING STORE CATTLE AND FINISHING.

BY THOMAS McMILLAN, SEAFORTH.

I think that farmers who grow stockers for the feeder, and allow him to make the bulk of the profit, make a great mistake. The foremost farmers of this Province make a practice of feeding animals of their own raising, and some of them have their cattle ready to ship to the British market at two to two and a half years. To accomplish this all that is required is to

feed a little more liberally. The first office of the food consumed is to support the requirements of the system, and it is only when we feed over and above that quantity (so long as it can be properly digested and assimilated) that we get a profitable return. If every farmer who is raising store cattle, would feed them so liberally that they will have reached the finished stage at two to two and a half years, he would secure the maximum of profit from his raw material. My experience teaches me that there are three reasons why the business of buying store cattle and finishing them is a profitable one to follow. First, because we are able to select suitable animals, whereas it is very difficult in raising store cattle to get them all of the right quality to carry to maturity with profit. Second, by buying in the fall they may be turned off before the dry weather of the following summer, when flies are bad and animals do not increase much in weight. The third reason is that a young animal will apply twenty-five to fifty per cent. of the food consumed in building up its own body, whereas at a later period it will turn probably ninety-five per cent. of the fertility contained in the food back to the soil. Therefore in buying these older animals, we supply ourselves with so many valuable machines for returning these enriching materials to the soil, and, over and above this, we obtain an increase in price for the finished animal.

In buying animals for feeding, good judgment is required. We invariably find that animals which have been taken care of up to the time of our getting them will give the best returns for the food consumed. There is an old saying that "well bought is half sold." This does not mean that you should seek to buy your animals cheap, because an animal of poor quality, which is not a good thriver, is dear at any price. I like to secure animals in the fall which weigh in the neighborhood of 1,200 pounds at two to two and a half years old, as I find that such animals will give the greatest gain during the winter and until they are finished. In buying in the fall I usually make this my guide in selecting my animals: if an animal has been on fair grass during the summer and is not in good, thrifty condition, it is good proof that it is not a suitable feeding animal. When our family were together we used to feed 160 to 180 stockers each season. To secure animals of the right kind we frequently had to travel over the country from Lucknow to the north of Ailsa Craig, a distance of one hundred miles. When I go out to buy stockers I usually start towards the end of September, when summer prices begin to fall, and it is important to watch the markets carefully. We know that on account of the great scarcity of labor, many farmers have seeded down their farms to grass. As a consequence, there has been a great demand for grass cattle in the spring and a corresponding slump in prices in the fall. On this account I consider that the business of buying stockers in the fall of the year is going to be a little more profitable in the next few years than it has been for some years past. These are conditions which we shall do well to watch. If a man will grow sufficient grain during the summer so as to be able to feed a fair number of animals during the winter, it will enable him to take advantage of this condition, and also to employ labor during the whole year. No farmer can make the most out of his farm who does not follow this system.

Q.—What are we to do with these poorer animals that are not suitable for feeding? These cattle exist to-day: where are we to find an outlet for them; how are we to dispose of them to the best advantage?

MR. McMILLAN: Do not raise them. They are an unprofitable commodity. Breed along the lines Mr. Anderson has laid down, and you will not produce such animals. You cannot sell such animals to me or to any other farmer who knows his business. If every feeder would follow the

course I do, the individuals who have these animals would soon cease raising them, because they would find that they could not dispose of them.

Q.—Do you feed Shorthorns only?

MR. McMILLAN: No; I would not make any distinction between Shorthorns, Aberdeen Angus and Herefords. But I would advise farmers who have a herd of Shorthorn grade cows to continue breeding them to Shorthorn sires. One cross of Hereford or Polled Angus may be all right, and I find that some of the best feeders are these first cross animals, but if you continue to cross breed, the size of the animals becomes so reduced that they will soon cease to be profitable. If you are going to keep Herefords, get a Hereford sire also, and the same with Polled Angus. One of the greatest mistakes made in this Province, from the standpoint of beef production, has been to cross Shorthorn cows with sires of the dairy breeds in order to secure a greater quantity of milk, thus entirely spoiling them as beef animals.

After the stockers are purchased, they should be stabled before it is too late in the fall. When a succession of night frosts occur, make it my guide to stable my cattle. After the animals have once been housed, it is a mistake to allow them to roam over the pasture during the daytime until the deep snow comes, because they will not make satisfactory gains under such condition. Every farmer should adopt a regular system of feeding, and they should follow that system from the time the cattle enter the stable. Too often the management is very loose for the first two or three weeks. They should be fed at the same time every day and they will soon know when to expect the next ration. If that ration is withheld half an hour or an hour, they become restless until it is given.

Clearliness and tidiness about a stable is very important, especially if silage is being fed. It is quite impossible to have a sweet smelling stable if pieces of silage are left lying around. It is my practice to sweep the passages after feeding each ration.

To be successful in feeding, you must treat your animals kindly. I believe that almost as much depends on the feeder as on the feed given, and the fact that such different results are often secured from identically the same ration is, I think, due to this fact as much as to anything else. A man who abuses his animals will never have satisfactory returns from them. Some years ago I secured a herdsman who came from the Old Country, where he had been a successful feeder. He had not made much headway in that line here, and I never had a man who was more painstaking and more anxious to do his work right. He was so anxious that every time he happened to see an animal standing in the stall, he would go in and give it a little food. The result was that in a short time the animals expected something every time they saw him, and we had to send him out on the farm.

No farmer who has not had experience with water placed before the animals so that they have access to it all the time, realizes what a difference it makes in the thrift of his animals. If they are turned out once a day to get water, they will take an over-supply, which is detrimental; but if water is constantly before them, they take it only as they require it.

Q.—Do you turn your cattle out for exercise?

MR. McMILLAN: I keep the bulk of my cattle in box stalls, where they get exercise enough. I only turn them out when I clean the stable, which is once a week. I do not think animals are any more thrifty for being turned out.

Q.—Do you dehorn?

MR. McMILLAN: We dehorn all our cattle. I would rather buy them dehorned than to take the horns off myself, and it would be well if farmers

would make a practice of destroying the horns directly they begin to appear in the calf. My observation is that the operation does not retard my animals at all. Occasionally one seems to get a setback, but it will always pick up again.

Q.—Do you saw the horns off?

MR. McMILLAN: I use clippers, but it makes little difference. I fed for three years in tied stalls, while my father on one side of me, and my brother on the other, fed in loose stalls. Their experience convinced me that loose feeding was the proper method, and I knocked out my stalls. I find it just as economical as to space as feeding tied. I have one loose box stall 38 x 12, which accommodates twelve animals; another for seventeen animals is 38 x 18. More manure is made in this way, as it takes a little more bedding. The manure is in fine condition and ready to put on the land immediately. The only objection to this system is that you cannot keep the animals as clean.

To keep down vermin, I make a practice of white-washing the stables every spring after the animals are turned out. In my section very few farmers do this. Stone stables in particular can never be kept fresh unless this is attended to. After the animals have been in the stables about two weeks, I take a mixture of one part of insect powder or hellebore, and three or four parts of cement. Put it in a one-pound can with the top punctured from the inside, and with this mixture I sprinkle each animal along the back. This is the best preparation I ever tried, and I have tried a good many. The cement is heavy and will work right around the body of the animal, carrying the insect powder with it. It should be applied every few weeks. There are a number of commercial mixtures which will answer the purpose, but it is quite an undertaking to use such mixtures where you have a large number of cattle.

In regard to feeding: As I never buy an animal that is not in good condition (and a good beef animal should always be in such condition as to be almost ready for the butcher), the finishing process is a comparatively simple one. For winter feeding I make silage the basis of the ration. When I say that, I do not wish to convey the idea that roots will not make a desirable ration. There is a place on every farm for the root crop as well as the corn crop. My ration consists of about twenty-five pounds of silage, five or six pounds of cut straw mixed with grain. I begin with about two and a half pounds of grain per day, and where animals are finished in the stall I gradually increase to nine or ten pounds. Never go back in the grain feeding: always keep increasing day by day—a little more to-day than the day before. Cattle that are to be finished on grass are not fed more than three and a half pounds of grain per day through the winter on an average. It must be remembered, however, that our silage is well cobbled, and there is in this alone about three and a half pounds of grain. Our grain ration is composed of oats, barley and goose wheat, which is grown mixed, to this bran and shorts are added. There is a great advantage in feeding grain mixed. Eight pounds of pea meal will, according to experiments, give one pound of grain: five to six pounds of oil cake will do the same; fed mixed, three and a half to four pounds will give a pound of grain.

Q.—Do you feed three times a day?

MR. McMILLAN: Yes, but I am not against feeding only twice. My nephew and my brother feed twice a day, and I think they get as heavy gains as I do. But I find that I can feed my animals just as quickly feeding three times as they can feeding twice.

Q.—When you are feeding roots, do you feed roots first, or grain?

A.—I do not feed roots except to my milch cows and my hogs. With silage in large quantities, I do not think it pays me to grow roots for feeding.

Q.—At what time in the morning do you feed?

A.—Six 'clock. We feed long clover hay after breakfast. We follow the practice of feeding our animals each time before we feed ourselves.

Q.—How many pounds of gain will they put on in six months on the ration given?

A.—Three hundred pounds would be a good average amount. I am able to get them much heavier by carrying them on to grass and finishing. The feeding of animals in the stable during the latter portion of the finishing period is a science in itself, and as a result of our experience in the matter, we make a practice of finishing most of our animals on grass. We can rent pasture in our locality for about the same amount as it would cost to supply the extra quantity of meal required to finish the animals in the stable, and with the labor problem as it is at present, we find it more satisfactory to finish on grass. With the exception of last spring and one other occasion, I find, taking the last nine or ten years as a basis, that we get better prices for our animals in July than if they were sold right from the stable.

Q.—Do you feed any corn on the grass?

A.—Not latterly. In years gone by some of the heaviest gains we obtained were made under this system, and I think it is a desirable practice. I know of some farmers who make a practice of finishing on grass and feeding meal, the meal being fed in good-sized troughs placed about a foot and a half from the ground, and they find it a profitable business.

Q.—How often would you water your cattle if you had not water in the stable.

A.—I think it would pay to turn them out twice a day, but I am convinced that it will pay better to put water in the stable.

Q.—Is oil cake a good feed for feeding on grass?

A.—First rate.

Q.—Is not flax seed meal better?

A.—I do not think so for steers. It is too expensive; although it may be all right for calves.

Q.—How many acres of corn are required to feed fifty steers.

A.—I grow about eighteen acres of corn. I have sixty-five acres of land and follow a three-year rotation: first year, grain, roots and potatoes; mixed grain and seeding down the next; clover crop the third, after which the land is plowed. On these sixty-five acres I fed last year sixty cattle, and five or six horses. Besides what feed I raised, I purchased \$150 worth of mill feed.

*(c) RAISING AND FINISHING CATTLE.

BY A. W. PARTRIDGE, CROWN HILL.

You have heard what has been said by our friend Mr. Anderson in favor of the store cattle business, and on the other hand, you have heard our friend Mr. McMillan give his reasons for preferring the business of buying store cattle and finishing for the export trade.

If both these systems have their advantages, as we all admit they have, why not combine the two and let the man who raises the store cattle, the

* See page 85.

material out of which to make our beef, also finish them for the meat market? For surely if there is profit in each of the other systems, there would be more profit in a combination of the two.

Let us try to make a fair comparison of the three methods.

Suppose we have a farm of 200 acres, 100 acres cultivated, 80 acres pasture, the remainder bush. Such a farm, if properly managed, would feed about 45 feeding steers or 60 mixed cattle, besides some horses, sheep and hogs.

Take first the store cattle farm. We would have 20 cows, 20 calves, and 20 stockers. We would sell the dairy produce of those 20 cows at about \$50 each; the 20 feeding steers sold in the fall would bring \$35 each, a total of \$1,700 in all.

We should have the disadvantage, as compared with the steer farm, of having too much labor in connection with those 20 cows. That is a serious objection under present existing conditions. But we would have the advantage of having some dairy by-products for the hogs, and every feeder of hogs understands how much that means.

Take second, the farm where store cattle are bought and finished. The method is to buy in the fall, feed on inexpensive feed, such as ensilage, clover hay, turnips and straw during the winter, with just a little grain in the spring, then finish on grass.

We have allowed that 45 head of these cattle would equal the 60 head on the store cattle farm. I think an average gain for such a bunch of steers in an average year would be about \$35 each. We have then 45 steers at \$35 each, which equals \$1,575. We have the advantage of having a minimum amount of labour, but we have the disadvantage of having no dairy by-products for the hogs. Also we have the great disadvantage of having to depend each year upon the market for our supply of cattle. We have to take the best we can get, whether it suits us or not, and pay for them what the market demands, whether there is much margin left for profit or not. If the selling price is low, and we make but little, we have not the cow end of the business with which to pull up our average for the year.

Then take the farm where the man both raises and finishes his beef cattle. We have 15 cows, 15 calves, 15 store cattle and 15 feeding for beef. We sell the produce of 15 cows for \$750, and 15 finished cattle for \$1,050; a total of \$1,800. We have less labor than the man with the 20 cows; have some dairy by-products, and get all the profit there is in our cattle for the feeder, giving the dealer no chance for a profit in buying and selling again the store cattle. As our cattle do not have to change hands till they are finished feeding, we save any loss that may occur in that way. Bringing them from calthood up, we know their temperament, and they know their master, their mates, and their environment. They have to undergo no change of conditions, or treatment, they are always at home and contented. We can have their horns removed while they are young, either by the caustic treatment as calves, or by the dehorning clippers as yearlings; so that they are ready for the feed lot without any drawback.

But perhaps the greatest advantage is in being able to breed and rear our own steers for feeding. We have it in our power to determine whether they shall be first-class in quality or only medium. Having decided on the type of steer we want, we can choose our cows, then select our sire, and as like begets like, we know very nearly what the finished article will be.

But right here, in connection with this question of breeding beef cattle, is where I, as a breeder and feeder of export steers, wish to give a word of

warning to the breeders of pure-bred Shorthorn cattle. I say Shorthorn, because they are practically the only breed in Ontario used in the production of our ordinary beef cattle. The Shorthorn grade is the cow for the man who wishes to produce beef in Ontario. Why are they so popular here? Because they are a dual purpose animal, and must be kept so if they are to retain their popularity. Under ranching conditions, a special beef animal is all right, but under Ontario conditions we cannot afford to keep a cow simply for the calf which she produces. The extreme beef type of the Shorthorn is an excellent beef animal, but it is not the animal for the Ontario farmer, who wishes to produce beef for the ordinary trade. If we could get for our beef a price high enough, so that the steer would not only give a profit on his own keep but would also pay for the feed of his mother, while she is producing him, then this type might be all right. But as prices are to-day, and I think are likely to be, it keeps even a first class steer hustling to pay his own feed and labor bill without having to help his mother out. So if the business is to pay, and that is what it must do, or else eventually die, we must have cows that will not only produce good steers, but will at the same time give a profit themselves at the milk-pail. And why should they not? Under natural conditions does not the cow have to provide food for her offspring? But that is more than many of our show-ring cattle to-day can do. They are like hens who lay their eggs, so to speak, and then are not able to rear them. But unlike the industrious hen who lays an egg every day, they only produce once a year. Such cows, I claim, are not the kind that the average Ontario farmer must have; and yet, if in order to get beef we are compelled to use sires from such cows, what can we expect but that our cows will become like that type? And to overcome this tendency, we find farmers introducing dairy-bred sires, only to find, too often, that they loose both beef and milk. Or else they choose as heifers to breed those that are of the lean type, because they expect them to become better milkers than those of the fat blocky type. But these heifers are generally off-type, lacking in size and in constitution, and will not produce the strong, hearty, robust steers we are after.

As an example I will refer to the herd of Mr. E. C. Drury, of Crown Hill. This herd was started by his father, the late Hon. Chas. Drury, by breeding good grade cows to stock introduced into that neighborhood by the late Thomas Mair. These cattle were large, strong constitutioned and robust, producing excellent feeding steers, and also giving a good liberal supply of milk. Nothing but pure-bred sires have been used ever since, and yet the herd has deteriorated in size and quality. Trying to avoid the extreme beef type without milk, they have selected the heifers showing more dairy characteristics, but have lost in size and constitution of their cows.

Why do not our breeders strive, by selection and treatment, to produce a strain of cattle, that will, when used on good grade cows, give profitable cattle for the average farmer to keep? Partly, at least, because the show-ring does not encourage them to do so. But I believe that such can be done. We have enough dual purpose cows to prove that if we went at it in the right way, we could have all our cows of that class. And surely any fair-minded man will admit that that would be better than having cows that will barely produce enough milk to feed their own calves. In the interests of the general farmer of Ontario, I make a plea for a strain of cattle that will give us profitable beefing animals and, at the same time, give a profit at the milk pail.

Q.—Do you pulp your roots?

A.—No, we let the cows pulp them for themselves.

Q.—What kind of cows do you raise?

A.—High grade Shorthorns. No dairy sires are used in our district.

Q.—At what age do you ship?

A.—At just past three years.

Q.—Do you raise all your calves on skim milk?

A.—Most of them. Sometimes we allow two calves to suck a cow.

Q.—Which system do you think is the more profitable at the present price of labor?

A.—We have a cheese factory in our neighborhood and send our milk to it in the summer. If there are any calves at that season we put them two to a cow but we prefer to have winter calves and feed them on skim milk.

Q.—Can you keep up the milking qualities of your herd?

A.—We have to admit that we have some difficulty in producing cows that will give the desired quantity of milk.

Q.—Do you think it wise to turn a calf of four or five months out on grass in the hot sun in the summer time?

A.—I think they should at least have a place of shelter where they can go to be fed their grain ration. It would perhaps be better to keep them in during the heat of the day and let them out towards evening.

Q.—What is the weight of your steers when sold?

A.—1,300 to 1,500 pounds.

Q.—How do you dispose of the product of the cows so as to make fifty dollars on each cow?

A.—By sending their milk to the factory in the summer and by making butter in the winter. We averaged that last year but it was a particularly good year.

Q.—What is the size of your farm and how many cows do you keep?

A.—We have 200 acres altogether, one pasture farm and one cultivated. We are keeping at present about eight cows and we also buy some stockers for finishing.

*(d) SUMMARY OF DISCUSSION ON HANDLING BEEF CATTLE.

By G. E. DAY, PROFESSOR OF ANIMAL HUSBANDRY, O.A.C., GUELPH.

In summarizing the subject that has been discussed by the previous speakers, I may say that three points of view have been presented. The advantage of following any one of the methods outlined depends almost entirely on the conditions surrounding each individual. Mr. Anderson, for instance, has a good deal of rough land which answers well enough for grazing young stock; this is comparatively cheap land, which, I assume, will hardly pay for cultivation. On that class of land a man can follow a lower pressure system than he can on high priced land, where he must get the highest possible return from every foot of soil. In some European countries where every square foot of land is highly cultivated and made to give the best return, it would be difficult to figure out a profit on the raising and selling of store cattle. In some districts it would be difficult to make a profit on keeping any class of cattle, such as the highly favored fruit districts of our own Province. Each individual must, therefore, study this question carefully, and if this discussion does nothing else, it will open our eyes to certain phases of the subject to which we may not have paid attention previously.

* See page 85.

I am well acquainted with Mr. McMillan's success as a feeder. One important factor in his success is the use of a light meal ration, and in the making of cheap bulky foods palatable to the animal, thus turning them into valuable meat. He uses straw and silage, and mixes them so that the animal will be encouraged to eat them, and he is able to make use of a great deal of cheap food in that way. This is one of the secrets of economical feeding; we must economize in this expensive item, meal. At the College farm, the best results have been secured where our meal ration averaged, the feeding season through, half a pound of meal per day for each hundred pounds of live weight in the animal—beginning light, and gradually increasing.

Mr. Partridge is following a little lower pressure method than either of the other speakers, for he is not only raising calves, but is sending milk to the cheese factory; therefore he cannot force his calves and get the same weight he otherwise would; but he finds it more profitable to do this and to accept a little less gain in his steers on this account. To one in his position, the dual purpose cow becomes a very important factor. We cannot give up the idea of a dual purpose cow, but we find it difficult to reach the ideal. Whether we shall ever attain it remains to be seen.

Many feeders say that they are losing money in the beef business; still we find that they are paying off mortgages and buying more land. How do you account for that? I think it is because they value the foods they give to these steers at full market price. That, you say, is perfectly proper. Certainly, if you have to buy your food; but if you were to sell all the grain you grow at, say one cent per pound, and had a fairly decent farm and an average crop, you would reap some profit, I take it, by so doing. I do not think it costs that much to produce your grain. If you sell your hay at \$10 a ton and your roots at six or eight cents a bushel, those products would also show a profit. Instead, however, of selling your grain on the market, you feed it to a bunch of steers and sell them in the form of beef, and you charge the steers with the market value of the grain, and if you do not see a profit over and above the profit on the grain, etc., you say you are losing money. To be fair to the steer, we should value the grain at what it costs to produce. If you can get more than the market price of these commodities after turning them into beef, well and good; but I believe the average farmer can afford to sell his hay, grain and roots at a shade less than the market price, if they are sold in the form of beef, because by so doing he is returning a large percentage of the elements of fertility to the soil, thus tending to increase his crops, whereas, if he sells these products in their original form, he is selling those elements of fertility from off his farm. Therefore, the man who is feeding steers raises his grain cheaper than the man who is not, because he obtains a larger yield per acre, and that man who feeds steers can sell his grain at a lower price than his neighbor, and at the same time make just as much, and probably more profit, because he is growing bigger crops, and hence is producing his grain more cheaply.

In reference to the selection of steers for feeding, Mr. McMillan stated that he liked steers in good flesh, weighing about 1,200 pounds. Why? For the reason, that by putting an additional 200 pounds on those steers, he will probably have them ready for market. Let us assume that such a steer costs four cents a pound, or \$48, and that the 200 pounds additional will cost the feeder eight cents a pound (it will cost more than that, taking the market price for everything). Your finished steer will then have cost you \$64. Say you sell it at five cents a pound. It would bring \$70, which would show a profit of \$6. Assuming that the steer you bought was of the same weight, but a thin steer, and you had to increase its weight by 300

pounds before it was ready for the market, it would then cost as follows:—price of steer, \$48; 300 pounds of gain at 8 cents, \$24, total \$72. It would then weigh 1,500 pounds, which at five cents would bring \$75, so that you would have a margin of only \$3. It is therefore evident that it costs you more to put a pound of gain on that steer than you can sell that gain for in the market. In order to make a profit of \$6 on the second steer, you would have had to purchase it at \$3.58 per hundred. Another point that must be considered is the weight of the steer at the time of your purchase. If you take a steer weighing only 1,000 pounds, at 4 cents per pound he would cost \$40, and if we assume that, in order to make him marketable, 300 pounds will have to be added to his weight, costing \$24, you would have a total cost of \$64. At 5 cents per pound you would then realize for him \$65, which gives only \$1 margin as compared with \$3.00 margin on the heavier steer. That is why a steer of good weight and flesh is worth more per pound to the feeder than one that is light in weight.

We are working on another problem at the College, but as yet I have no figures to present. The question is, does it pay better to buy short-keep steers in the fall and finish them by the first of January, or to buy a cheaper class of steers and carry them on to spring? There are so many grades of steers that we find it very difficult to get accurate figures from which to reach a conclusion.

HOW TO JUDGE A BEEF STEER.

(Illustrated.)

By G. E. DAY, PROFESSOR OF ANIMAL HUSBANDRY, O.A.C., GUELPH.

In taking up this subject we will assume that those present are unfamiliar with the matter of live stock judging. First, I may say that the principles to be observed in judging a beef bullock are somewhat different from those that guide us in judging breeding animals, for the reason that the finished bullock has completed his career, and we therefore examine him solely from the standpoint of his value for the block. It is a question of which animal will yield the largest amount of desirable carcass; whether the carcass has a large amount of meat where it is most valuable, and a small amount where it is least valuable. On the other hand, in a breeding animal we have to look for breeding type, character, and constitution, and indications of future usefulness.

For my part, in judging live stock, I always like first of all to look at the animal from all points of view at a little distance, because it is the only way by which to obtain a proper estimate of the animal as a whole,—whether he has depth of body in proportion to length of leg, and is well balanced generally. Having summed up the animal as a whole, we can come to the investigation of his particular points. The class under consideration is that of a beef animal, consequently we must lay special stress on those portions of the animal where we obtain the most valuable meat. As most of you know, the most valuable cut on the carcass is that lying right over the short ribs or loin; it is what is called the porterhouse steak. It is in this part also where you get the tender under-cut, of which many people are very fond. It is important that the animal should be extremely well developed over this particular part. Right back of that, beginning at the hooks and extending to a point in front of the setting on of the tail, is where you get the sirloin

steak, which is nearly equal in value to the porterhouse, and in any ordinary market you will probably pay as much for it. Just in front of the porterhouse you have the rib roasts, which are also valuable cuts. After the butcher has cut off the sirloin, he cuts off the round steak, which is lower in value than the points I have mentioned. Therefore, in judging the fat bullock the points on top should receive special attention. A deep, strong well-sprung rib which will give a broad back is of course desirable; a wide, full loin, coming well out to the points of the hooks, is desirable, for the reason that this region contains so much valuable meat. An animal should be so well filled out that you can scarcely see where the hook points are. The flesh should be carried well down on the quarter. This meat is not the most valuable but it has considerable value nevertheless.

Having present a framework with a large expanse for putting on valuable meat, the next question is to consider whether the meat is thickly placed on the parts where it is valuable, and then, whether it is of the right quality. The question of thickness and quality is hard to determine in a very fat animal. The steer before us is very fat, but you will notice one very desirable thing, he is exceedingly smooth. There are no rolls or ridges of fat; no bunches of fat at the pin-points, while the shoulder is smooth and nicely covered. There is no indication of roughness or coarseness, and although he may not be above criticism, at the same time he possesses merits of thickness and smoothness of flesh, which are two very important points. The faculty of determining the character of the flesh in an animal while yet alive is an art only to be acquired by long experience. Mr. Gosling is a gentleman who possesses that art, but I do not pretend to be able to do it in all cases. In an animal so highly fitted as this, it is almost impossible to tell whether he will kill thick in flesh or whether he will have rather too little flesh and an excessive amount of fat. A steer that is naturally thick-fleshed and has a large amount of lean down the back-bone, will carry more fat without its being undesirable than one which is thin in lean meat.

If this were a breeding animal, we should ask that he be low-set, deep in the body, thick through the heart and of good girth. Why? For the reason that a short-legged animal is in reality an animal with good depth of barrel. If the barrel is shallow, it means the lack of feeding capacity—an animal that will not take the largest amount of food; and an animal to make good gains, must be a large consumer of food. We want depth in the region of the heart, not because this cut is valuable, but because it is an indication of constitution, and we know that an animal with a good top, such as the butcher demands, is almost always deep at this point. The flank is also important because it is associated with depth of body, which means feeding capacity, and more than that, it is usually associated with a pretty well carried down twist. Therefore an animal should be deep all along. An animal that has a thick, blocky body has usually a short neck and is well filled in front of the shoulder, and an animal that is thick there usually possesses feeding qualities of a high order.

The head must also receive the consideration of the feeder. Width between the eyes, a nice, clean cut face below the eyes, with fairly prominent forehead, and a full, bright eye are all indications of a good feeder. The eyes should be wild looking, however. Fineness of bone below the knee indicates fineness of bone throughout the animal, while a broad muzzle and large nostrils indicate good lung capacity.

A mellow, elastic skin, and a thick, furry coat of hair, indicate a thrifty, vigorous animal and a good quality of flesh.

JUDGING MUTTON SHEEP AND FAT CATTLE.

(Illustrated by live animals and dressed carcasses.)

BY JOHN GOSLING, KANSAS CITY, U. S. A.

Mutton Carcasses.—Judging that is only half right is misleading to the producer to say the least of it. In judging beef or mutton it is important that the judge should be instructed as to whether he is judging from the point of view of the breeder and feeder, or of the butcher and consumer, as their standards are necessarily different.

I have selected three prize mutton carcasses this morning on which to base my remarks. The first is an over-fat animal of the Shropshire breed; the second, a Dorset lamb, showing an undesirable mutton type; the third a first prize mutton carcass of the Leicester breed, illustrating the correct type. The weights are as follows: Shropshire, 213 pounds; Leicester, 113; Dorset lamb, 93 pounds.

The Shropshire carcass gives evidence by the excessive development of fat that the life of the sheep was prolonged for six to nine months longer than is necessary. The animal as it stood alive was no doubt intended mainly to show the capacity of the breed, and, from the breeder's standpoint, it doubtless would have been regarded as a fine animal. It indicates to the onlooker that animals of that breed are capable of producing so much weight. From the consumer's point of view mere weight is of no advantage unless it is associated with useful meat, and there is no demand on the part of the consumer for fat in such quantity as is present on this carcass. You will observe that the flank of this animal, on account of this over-development of fat, is as large as that of a baby beef, and is, of course, quite abnormal in a mutton sheep. The twist is full of fat and bridged across almost even. Contrasting the carcass in this respect with the Dorset on the one hand and the Leicester on the other, it will be observed that the difference is a remarkable one. While a certain amount of fat is desirable in a carcass, an excess means waste and has to be consigned to the tallow box. I understand that this carcass is something over two years old; it was probably a February lamb. Evidently it has had the best kind of treatment from the beginning, and it has responded nobly. It proves that you will have no difficulty in fattening animals of the Shropshire breed. It makes a splendidly well balanced carcass but the disappointment comes when you cook it. They can be made very attractive for showing on foot at twenty-one months, and such an animal as this has undoubtedly been kept for show purposes at other places besides this. Observe the width of the back, the extension of the rib with two inches of solid fat on it. The neck, which is the cheapest portion of the carcass, is simply a mass of fat, and the roll at the back of the neck, is a good deal more than a handful. I never saw a better evidence of completeness of fat development than in this carcass.

Coming to the Dorset carcass there was some hesitancy on the part of the judges as to whether any of the Dorset lamb carcasses should be awarded a prize as they were all too thin. You will see that the flanks are flabby, the brisket is lean and the outside of the shoulder is bare. The carcass also presents a stickiness to the touch in all ordinary temperatures. A carcass that is thin is hard to cool and this clammy condition is often present. It indicates to my mind that there was something wrong with the animal. I do not know that such a carcass is worth anything, and I would not care to offer it

to the public. If you have sheep of this breed do not keep the lambs longer than from eight to twelve weeks; take ten or twelve cents a pound for them, if you can get it, and have another lot ready in six or seven months. This is the place of the Dorset breed. They are a useful breed for raising lambs for market, as they will give two crops a year.

JUDGING FAT CATTLE.

Live Steers.—To illustrate this portion of the lecture, two steers were introduced, the first being a Shorthorn grade of a very undesirable type, standing on long legs and showing roughness and lumpiness in the carcass; the second steer was a Shorthorn and Polled Angus cross, with some traces of Holstein blood. This steer was just over twenty-three months old and weighed 1,600 pounds.

Referring to the animal of the undesirable type, Mr. Gosling said: The first point we look at in the Shorthorn is the hook-bone, which is naturally somewhat prominent in that breed. It would be a modest calculation to say that this steer has an inch and a quarter of fat on the points of the hook bones. With that extension of hook bone, the thigh is flat,—there is no rotundity or fulness. While I would not turn a good steer down because he has not quite enough fulness at this point, I would never select a sire with this weakness. This steer's thigh is remarkably flat however. It is neither full enough nor deep enough, and at the same time, the leg does not get into the beef soon enough. The twist is shallow. The rump is exceedingly flat and the animal is cow-rumped, and has little more flesh on his body than a heifer. A male animal should have an abundant development of muscle or lean meat, as it is a masculine characteristic. This animal shows a great lack of the flesh element, and its place is taken by fat. A certain amount of fat is, of course, desirable in a beef carcass just as it is in a mutton carcass. Ability to produce fat is a desirable characteristic, but excessive fat must be avoided both in beef and mutton. When you come to the back of this animal, while the backbone appears to be bare to the touch, if the animal were dressed and hung up, you would find half an inch of fat at the thinnest point. The loin edge is prominent and consists of a ridge of fat. The shoulder-blade is neat and well covered, but that amounts to nothing as it is simply "chuck" beef, and if there is anything to it, it lies under the shoulder-blade and not above it. The extension of the shoulder of the Angus for instance is caused by the presence of the flesh element under the shoulder-blade. The brisket of this steer protrudes somewhat and while a little brisket is all right for appearances, it is of low value as edible meat. By the time the ball of fat at the tongue root is well developed, you may conclude that a steer is about ready for slaughter.

Turning to the second steer, we have a fine, fat bullock with a smooth carcass. The loin edge is not apparent, and there is nothing prominent or protruding anywhere. There is three-quarters of an inch of good lean meat where the short rib terminates. The skin is mellow and the hair indicates good condition. If, when you rub the coat with your hand, the short hair has a tendency to get under the finger nail like a sliver, it is a sure indication of poor feeding quality in the animal. When it is of soft texture and gives way to your hand, you may be sure that it is all right in that respect. This animal is perfectly smooth over the rib. He is deep-chested and shows a splendid development of constitution. In handling, the flesh presents springiness to the touch, showing a plentiful development of muscle for lean

meat'. Taken altogether, he presents a remarkably well balanced carcass. Such a steer will be a profitable feeder because he has the quality. From the butcher's and consumer's standpoint he has quality also, as indicated by the springiness of touch, desirable skin and soft hair.

It must be borne in mind that the Shorthorn grade steer used in this demonstration does not, in any sense, represent the Shorthorn breed; but he was picked out purposely to represent an undesirable steer. His undesirable qualities are not due to Shorthorn blood, but rather to a lack of those qualities most sought after in the Shorthorn.

MOST PROFITABLE METHODS OF HANDLING SHEEP.

By HON. JOHN DRYDEN, TORONTO.

In discussing this subject, it is well to remember that different breeds of sheep require, to some extent, different treatment. Some of the breeds I know very little about. I do not know how to handle Merinos, for instance, and what I have to say applies to the more common breeds in this country, namely, Leicester and Shropshires and their crosses. Perhaps I might include Cotswolds and Lincolns, but there are not so many of these as of the other breeds, and I think that Cotswolds, perhaps, require a little different treatment from the others. I am going to call attention to a few principles which you can apply to the particular circumstances in which you find yourself. The most important principle connected with sheep breeding is to maintain the health of the sheep. Sheep with running noses, sheep that cough continually, or are lame with foot-rot, cannot be handled profitably by anyone. You had better get rid of them and start over again, if you cannot cure these ailments. A healthy condition is necessary with all domestic animals, but particularly so with the sheep.

There is some land in this country which is unsuited to the profitable handling of sheep. If your land is low-lying, and especially if it is inclined to be damp, no matter how rich the soil or how luxuriant the grass, you will find that it is unfitted for the profitable growing of sheep. Upland pasture will always give the best results. As between low, rather damp land with rich soil, and somewhat barren hills, I would prefer to take the latter. The more room sheep have the better they thrive, and the more profit you will get out of them. Therefore I always insist on a wide range for sheep. I use that word advisedly. Some people say, "Give sheep a good run." What I mean is extent of territory over which they may roam. The wider scope you give them, so that they do not always pasture on the same spot, the better they will thrive. In winter the same principle holds good. Sheep should never be kept in close, damp places. The pens should be dry, both under foot and overhead, and let the sheep have plenty of fresh air. Unless the pen is on high land where there is plenty of drainage, I would have a wooden floor raised a little above the ground. The worst experience with foot-rot I ever had was long ago in the early days, when I was quite a young man and did not know anything about foot-rot. Some think you will never get it unless it is brought in, but this was not so in the instance to which I refer. Sheep will contract the disease easily if they are kept in a damp place. Our pen looked dry enough on the top because we bedded it frequently, but we found that the sheeps' feet went through the dry straw into the manure beneath, and there was a good deal of dampness there. This

gave rise to the disease, which spread from one to another. It can easily be avoided if you will take care to keep the pens dry.

Q.—Is there any danger of sheep contracting the disease in the summer time?

MR. DRYDEN: Not in this country, unless the sheep are kept on damp, mucky land. In the old country, where they have had sheep on the same piece of land for years, the disease seems to be in the land, and they always have more or less of it among their sheep.

Q.—Don't you think it is caused by the hoof turning under and accumulating dirt?

A.—No; it starts above the hoof and works down. In order to maintain the health of the sheep plenty of fresh, pure air is necessary. In summer time they get plenty of fresh air, but they require it in winter as well. Nature has supplied the sheep with a very warm coat. If you put them in an ill-ventilated place, where the breath of the sheep makes the pen warm, they will perspire and the fleece becomes damp. Turn them out on a cold day, when they are in that condition, and they are almost certain to take cold. It is better to allow the air of the pen to correspond more closely with that outside. If you keep them dry, the cold will never trouble them. My instructions at Maple Shade are to keep the doors open all the time, except when the ewes are lambing we are obliged to confine them a little closer. On stormy days with the snow blowing about, we often find our sheep lying comfortably in the snow outside of the pen altogether. Therefore I have decided in my own mind that one of the principles necessary to be observed if you would handle sheep profitably, is that they should be given an abundance of fresh air at all times in the season.

The next important point, is feeding. In summer there is no better feed than the grass. Grass should not be long like you would feed cattle, and you must manage your pasture so that it never gets too high. It must always be fresh, and it is better to have two or three lots, and keep the sheep moving from one to the other, so that its freshness is ensured.

Q.—How do you like clover for pasture?

A.—It is probably the best sheep pasture you can have.

Q.—Have you had any experience with lucerne?

A.—I have not had any experience so far in pasturing it, as we are just starting it on my farm.

Q.—Do sheep require water in the summer time?

A.—I think so. Sheep will do with less water than any other class of stock, and I have known them to do without it for some time. But I am talking about handling sheep profitably. You had better have some water so that they can get a drink when they want it. If scarcity of grass is likely to occur towards autumn, two crops are very useful to supplement it. The one commonly grown is rape. There is some danger from rape if you turn the sheep into it and feed them nothing else. If you are going to pasture sheep on rape, a good plan is to let them get it by degrees, or, better still, have a grass pasture alongside so that they will get some grass and some rape. Rape is especially dangerous after the frost comes, and most of us know that considerable losses sometimes occur in that way, although in latter years there has not been much trouble because more attention has been paid to these details.

Q.—Will not sheep take harm on rape sometimes even before frost comes?

A.—Not if they are used to it. Some people grow their rape very late, and before the sheep get access to it, frost comes, and they are likely to get into trouble.

Q.—Have you ever had a similar experience with red clover?

A.—That is only likely to occur when you have allowed the clover to get too high and too rank. You must keep it down. Do not let your sheep pasture on high clover or you will have precisely the same trouble. Rape is strong food. When lambs become accustomed to it, they fatten rapidly on it. The second substitute for pasture is cabbage, which, I think, is a better and safer crop in every way than rape, and I fancy it will gradually take the place of that crop. There is no danger from it; you can grow a great quantity of food per acre. It is no trouble to cultivate and you can handle it with about the same machinery. Our experience with this crop has been extremely satisfactory.

Q.—Can you grow it as early as rape?

A.—As early as I can grow rape. I am accustomed to plant out the rape in drills and cultivate the ground. The sheep walk down between the rows of cabbages, which are rather close together. If I do not cultivate, the crop is apt to go to weeds on my farm. We have a two-horse cultivator which takes two rows at a time.

Q.—How do you plant your cabbages?

A.—We sow the seed with a drill. We do not transplant but thin out like you would turnips.

Q. Have you experienced any trouble with the cabbage worm?

A.—No, we have not as yet. There will be, I suppose, more or less trouble with this pest. But there is worse trouble with rape.

Q.—Do not cabbages take longer to mature?

A.—Not much longer.

Q.—Do you turn the sheep into the cabbage patch the same as with rape?

A.—You may, if you choose, but we think it advantageous to cut the cabbages. I suggest that you try it and work into it carefully, feeling your way.

Q.—Is not the seed expensive?

A.—Not much more expensive than turnip seed.

Q.—What kind of cabbage do you grow?

A.—I do not remember the name of the variety, but it is better to use an early cabbage as you want it to mature as early as possible. Any kind that you find suitable in your garden, you will find suitable in the field.

Q.—How much do you thin them?

A.—About twice as far as for turnips. You will have to work out these details for yourself according to your own circumstances.

In winter, sheep should have a root ration. If you are handling breeding ewes, however, it is not advisable to feed too many roots, but for lambs or yearlings a considerable quantity may be fed.

Q.—Do you ever feed silage to sheep?

A.—You may feed silage if it is good, but if it is sour, you had better be careful. We sometimes feed our horses silage. I should not like to intimate that I consider it particularly desirable for sheep. If you intend to feed any grain, there is nothing better than oats. You do not need to grind them as the sheep will do that for themselves.

If you are raising lambs for profit, there are two courses open to you: you may either produce early lambs for the early market or else produce lambs for the ordinary market. If you decide to raise early lambs so as to obtain the advantage of the higher price which you are likely to receive for them, you should be near a large market like Toronto, where early lamb is in demand; but you must be prepared to take more trouble and give more time

to it in order to make it a success. The ordinary farmer had best stick to the ordinary market, because he cannot give the early lamb business the time and attention necessary.

If any of the lambs are weak and do not get enough milk, you should supply it, and they should be taught to eat some kind of food as early as possible. They must be kept growing continuously and rapidly, and no class of stock will respond better to a little extra care.

Wool has now begun to count in the profitable handling of sheep. For some years we did not pay much attention to it because the price was so low. Now that the price is improving, it is worth while giving it some consideration. We long ago discontinued the practice of washing sheep, as the wool can be washed better after it is shorn. If you wait till the weather is warm enough to wash, you will postpone the shearing until too late in the season. We shear our sheep from the first to the middle of April. If it is nice, mild weather, they may be kept in an ordinary pen after shearing, but, if the weather is severe, you must close it up a little. You have taken off their garment and you must not let them take cold; but they soon get enough coat to protect themselves even if the weather is a little cold. A few years ago I secured a shearing machine, and I consider it one of the best devices we have on the farm.

Q.—We cannot get a market for unwashed wool.

A.—You can if you will pack it in sacks and ship it to Toronto.

Q.—How much less per pound do you receive for it when unwashed?

A.—You get a less price but you have more weight. It is proper that the price should be reduced to some extent, and it amounts to about the same thing.

I think that a few sheep should be kept on every farm as they give considerable profit and real pleasure to those who are fond of such animals. The one drawback to the raising of sheep in this country is the prevalence of dogs. Years ago I introduced a Bill in the Legislature in this regard. I thought it was a good Bill and founded on sound doctrine, and I think so still. I had a dreadfully hard time with it and found there were more legislators who loved dogs than had any affection for sheep. The Bill was founded on the principle that a dog roaming about the country without any owner ought to be regarded as a wild animal and treated accordingly. When beyond control, dogs are enemies to everybody, and I think I should have the right to protect myself and my property against them. If this Bill had become law, the men who loved their dogs as much as they said they did, would have kept them at home. The Bill was finally modified so as to provide that a dog could be shot if found roaming on a farm where sheep were kept between the hours of sundown and sunrise; or you can shoot a dog at any time you find them actually attacking your sheep. This I had to accept as a compromise. I do not think the law as it stands is of much service, but it is perhaps better than nothing. My present plan is to discard dogs myself, as I find that by doing so I am not troubled much by my neighbors' dogs. I find I can get along better without dogs than with them—and I have not had one on my farm for many years. You may have all you like, but keep them at home and do not bother me. In England where the shepherd goes out with the sheep every day and takes two or three dogs with him, it is different; but that is not necessary here, as sheep are not kept in sufficient numbers.

Q.—In regard to foot-rot, is blue vitriol a good remedy?

A.—It is very severe. They manufacture a paste for it in England which is very useful. If you have had no experience with it, I might say

that there is no use in applying any remedy until you have pared away the hoof.

Q.—To what extent does worrying by dogs impair the breeding usefulness of the flock?

A.—If it is a bad case, the injury that results is considerably more than the actual killing of the animals, those that survive are not nearly as useful afterwards.

M. CUMMING, Principal Agricultural College, Truro, N.S.: I wish to point out a few of the benefits that result from the keeping of sheep apart from those referred to by Mr. Dryden. We have in Nova Scotia a disease which has resulted in the death of a large number of cattle. It is known as the Pietou cattle disease. Investigations recently carried on at Ottawa have proved that it is due to a weed belonging to the ragwort family, which grows very abundantly in that section. Many people said that this weed could not be the cause of the disease, because it exists in large quantities in the old country, and the disease is not known there. While there last year I made some enquiries and found that sheep eat it readily, and no trouble to cattle results in consequence. The keeping of sheep is one of the most economical methods that can be adopted for clearing our farms of some of the more objectionable varieties of weeds.

I am well acquainted with the practice of Mr. Dryden at Maple Shade, and it was doubtless due to an oversight that he failed to lay stress on the great importance of dipping sheep. Much greater losses are occasioned in this country by the failure to dip sheep than are caused by the presence of ticks or any of these nuisances. Sheep should certainly be dipped in the spring, and I believe it pays to dip them again before they go into winter quarters.

Q.—Are not insect powders about as good?

A.—They are not quite as satisfactory. They may be useful in treating ticks, particularly in the case of lambs, but they are of no use in the treatment of skin diseases. A liquid dip keeps the skin in good shape.

Mr. DRYDEN: The dipping of sheep is not only a cure for vermin but if a good dip is used, the wool grows faster as the skin is in a more healthy condition.

Prof. CUMMING: Another point which I should emphasize is the importance of giving breeding ewes plenty of exercise during the winter. The failure of the lamb crop is often due to the fact that the ewes have been kept too closely confined. Much of the injury attributed to the feeding of roots in such cases is really the result of lack of exercise.

In regard to rape as a food for sheep in the fall; rape should be sown one-third thinner for sheep than for cattle. If it is sown thinly, a large leaf is produced, which is not so succulent and therefore not so apt to cause bloating.

Q.—What treatment do you give for this trouble?

Mr. ROBT. MILLER: About half a cup of coal-oil is an effective remedy in the case of sheep. The dose should be increased to one cupful for cattle. I give sheep about half the amount of medicine that I would give to cattle or horses.

Prof. CUMMING: In regard to the general diseases of sheep, I think the reason why they are less prevalent than formerly is because we have learned the value of changing the sheep pasture as frequently as possible. If the pasture is changed in the manner indicated by Mr. Dryden, little difficulty will be experienced in this connection.

As to the number of sheep one can profitably keep, I knew of a man who had been very successful with cattle and horses and who also made an excellent profit from a flock of about twenty sheep. He became carried away with the idea that sheep were exceedingly profitable, and accordingly placed 600 mutton sheep on his farm. But it is a very different matter to keep a large flock, and you will readily understand that he might lose considerable money in such an undertaking, which was exactly what occurred in this case. The only way to keep a large flock successfully is to subdivide it into small lots. I doubt whether the average farmer without any experience can successfully handle more than twenty sheep. He can, however, run a flock of twenty very profitably. I can see no reason why he should not pasture his sheep with his cattle for a great deal of the time. I have never been convinced that sheep destroyed pasture for cattle to any extent. On the other hand, they eat many weeds which cattle will not touch and my experience is that if only fifteen or twenty sheep are kept, it makes little difference to the pasture.

Q.—Would you recommend pasturing them with the cattle or turning them into the field after the cattle have eaten the best of the grass?

A.—The latter is the better practice, but of course one must vary his practice some time to suit circumstance.

Q.—Do your sheep remain in the pasture or go to the buildings in summer time?

A.—It is largely a matter of habit; if you never feed your sheep in the stable and do not give them much attention in summer, they will soon discontinue going there.

Q.—Do you not supply a paddock into which they can go at night-time?

A.—It is a very good practice and insures them protection from dogs, but you lose a good deal of the value of the manure in this way. Sheep if left to themselves will always select some high and dry knoll on which to sleep, and there is very great benefit in improving the fertility of such spots and thus improving the pasture.

MARKETING WOOL FROM THE STANDPOINT OF THE PRODUCER AND MANUFACTURER.

BY LT.-COL. D. McCRAE, GUELPH.

The first essential in growing good wool—and by that I mean wool of uniform staple—is to see that the sheep are kept in a good thrifty condition all the time. If a flock is allowed to go off its feed, the wool will, at that period develop a weak spot; and in the process of manufacture it is almost certain to break at that particular point. The same result occurs if the sheep contract disease. Conditions of this kind produce what is called brashy wool, and materially decrease its value. There are two processes of manufacture, carding and combing. In the latter process the wool is sometimes stretched three times its original length, and you will therefore readily understand why any defect in the wool will cause it to break. Consequently, if the best prices are to be secured, it is necessary first of all to grow a good article.

Q.—There should be some discrimination used in buying wool.

MR. McCRAE: There is no discrimination at present; in fact half the buyers do not know anything about such defects; but, at the same time, if a

poor article is produced to a general extent, it has a tendency to lower prices as a whole.

It is difficult or impracticable to grow clean wool in this country. In England where the sheep are on pasture all the time, the wool when shorn is practically clean. One reason why a greater proportion of our wool is not marketable in England is because manufacturers there object to its "dirty" condition. The manufacturer does not consider mere soil as dirt. Wool is said to be "dirty" when it contains foreign substances, such as burrs, straw, etc. Big burrs in wool are very objectionable; no machinery will take them out, and they have to be clipped out by hand. Burrs should be eradicated from the farms and fence corners where sheep are kept. The small burr is not so troublesome, as it is taken out with comparative ease. Another cause of dirty wool in this country is winter feeding in the house from racks, for the reason that pieces of hay and straw get into the wool in this way. It is impossible to winter sheep in buildings and prevent that, and I may say also that the practice is detrimental to the health of the sheep. All dirt and tags should be removed from the fleece before it is rolled up. So far as washing sheep is concerned, I do not approve of it in a general way. It often results in the sheep taking cold. Then again, sheep improve after being shorn, and if you wait until the weather is warm enough to wash your sheep, it delays shearing.

Q.—Do you not get a larger clip of wool by shearing early?

A.—I think so.

Q.—Wool will grow faster in the spring after it is shorn and I think this will fully make up for any loss that may be incurred in selling the wool unwashed.

Lt.-Col. McCRAE: The price of wool is still low, and has been for some time. Some suggest that a high duty should be placed on wool to compel our manufacturers to use the home product. They overlook the fact that most of the wool grown in Canada is not of a class that can be used by our manufacturers. They require a finer class of wool. The bulk of our Canadian wool is long wool of the Leicester type, suitable for combing. It goes to the United States where it meets a high duty, which tends to reduce the price to our growers. Another reason for the low price is that the supply of wool is accumulating, as it is almost indestructible. It is used over and over again in the form of shoddy. Many tons of woollen rags are brought into this country and used in the manufacture of cloth. These are gathered in all the cities of Europe, and much of the material has been worn by the lowest classes. It might be well to consider whether it should not be shut out by the tariff, although we must admit that many of our manufacturers could not get along without it, and it enables the poor man to obtain cheaper clothing than would otherwise be the case. It is questionable, however, whether it is really a cheap article or whether the buyer gets value for his money. I doubt whether there is much pure woollen goods sold in Guelph.

Q.—Why cannot manufacturers get along without it?

Mr. McCRAE: Some of them use such a large quantity of it in the class of goods manufactured that they cannot do without it, and continue to manufacture goods of that class. The first man in Canada who was able to make flannels out of cotton and shoddy made quite a fortune. You can buy a garment for forty cents which, if made of pure wool, would cost more than that for the wool alone. Some of the finest ladies' dress goods are backed with shoddy to give them weight, and only the face is manufactured from the finest Australian wool.

Q.—Will wool stop growing while on the sheep's back?

A.—I do not think it will stop altogether in a healthy sheep, but I dare say that disease in sheep will stop its growth.

E. B. BIGGAR, Editor, "The Canadian Journal of Fabrics," Toronto: Col. McCrae has stated that only a small percentage of the wool used in manufacturing is pure wool—that is to say, wool that has never been used in any fabric before, and is in its complete state just as it was taken from the fleece. Perhaps not more than ten per cent. of the entire production of woollen goods of the world is made from absolutely pure wool stock. The proportion of pure woollen goods in Canada is considerably higher than in many other countries. Lack of skill on the part of our manufacturers in the manipulation of adulterated fibres is accountable for this. The very expertness of the English manufacturer enables him by the use of these adulterants to undersell the Canadian and American manufacturers in the same line. The clothing trade is proof of the fact that Canadian goods are, as a rule, a more genuine article than those which are imported. Twenty-five per cent. of the cheaper cloth which the everyday man wears is purchased by the Canadian clothing factories from Canadian mills. The other seventy-five per cent. for the lower grade of goods comes almost entirely from Great Britain: but in the higher grades, especially in heavy goods, you will find that eighty to ninety per cent. of the stock used by clothing manufacturers in this country is made by Canadian mills. You do not need any further proof of the relative value of Canadian goods.

The demand for a duty on raw wool, if acceded to, would kill the Canadian woollen manufacturing business; it would destroy the home market for wool, so that you would have to depend on the foreign market, and it would deprive you of the better class of home-made goods you now get. There are certain classes of wool produced in this country which cannot be used by manufacturers of the higher classes of goods. The ordinary Leicester and Cotswold wools go into the manufacture of blankets. Down and Merino wools are used for yarns and knitted goods and the higher class of tweeds. There is no advantage to be gained by placing a duty on wools that are not grown in this Province, and these are the class that enter largely into the manufacture of high-class clothing.

As to shoddy, no word is better understood than the word "shoddy" when used in its general sense; but when you come to apply it to the trade no term is more misleading or less understood by the average man. Wool is manufactured in two ways; the short staple wool is carded while the long staple wool is combed. There are two main classes of shoddy; first, the by-products of manufacture, such as noils, waste in combing and carding, clippings from the knitting mills, tailors' clippings, etc.; second, shoddy manufactured from woollen rags, which is what is generally understood by the term shoddy.

Q.—I never understood that such by-products of manufacture were called shoddy. I always understood that shoddy was made from garments that had been worn.

A.—That is correct so far as it goes. My point is that these other by-products are not pure, full length fibre; they have been through a manufacturing process and they are, to all intents and purposes, shoddy in the true meaning of the term. The fibre is no longer its full length and every time you shorten it, you weaken the yarn. These are by-products therefore and should be included in the shoddy class. And yet, though they are shoddies, none of these re-manufactured wools may ever have been worn on a human back.

The point is sometimes raised that the use of shoddy from rags is likely to give rise to disease. In this connection it should be pointed out that any wool stock made from mixed rags is put through a carbonizer, and the wool is then as truly wool as before although, as a matter of fact, it is more or less weakened by the process. This process destroys all vegetable fibres, such as cotton, linen and jute, but leaves the animal fibre intact. Sulphuric acid is used in carbonizing and thus the process itself involves the disinfection of the rags. The larger mills have their own carbonizers, while the smaller men send their shoddy to the wool-stock and shoddy manufacturers. Dirty wool from the farmer has to be carbonized to get rid of foreign substances, and this adds to the expense and reduces the price to the producer of wool, so that the cleaner the farmer can keep his sheep the better the price he can get for his wool.

Q.—Don't you think that discrimination in price would secure cleaner wool? There is no object in the farmer taking extra pains as it is, for the dealer does not seem to get any better price for clean wool.

A.—Manufacturers claim that they are only too ready to give top prices for first-class wool. It pays them better to use good clean wool than to have to carbonize it, even if bought at a low price.

Q.—But the farmer does not sell it to the manufacturer?

A.—Of course when you are selling to a dealer, you are somewhat at his mercy. It would be a good thing to have a wool market or clearing-house in Canada to which the individual farmer could send his wool at any time and to which the manufacturer could resort when requiring special grades. The wool could then be graded more satisfactorily. The English manufacturer has the advantage of us in this respect and if the system were introduced in this country, it would improve the position both of the manufacturer and the wool grower.

Q.—In other words, there ought to be a partnership between the manufacturer and the grower?

A.—That is precisely the situation. The Shoddy Bill in the United States resulted in just such a move, and much good came from it, for now the sheep raisers and the woollen manufacturers there are working together as they never did before.

Q.—Would five per cent. of the shoddy rags brought into Canada be carbonized?

A.—A great deal more than that, almost all the mixed rags are carbonized. The imports come from all over the world and are landed chiefly at the port of Montreal, where two large carbonizing plants are located.

Q.—Supposing a bale of pure wool rags was received by the manufacturer, would it be put through the carbonizer?

A.—Not if they were all wool, but nearly all contain vegetable fibre such as jute and cotton.

Q.—But the woollen rags, no matter how dirty or infected, would not be carbonized?

A.—No, that is true, but practically all the rags that come require carbonizing. There are many difficulties in the way of a Shoddy Bill being introduced. If it could be worked out equitably, the Canadian manufacturers would consider it as being to their advantage. But even if you prevent the use of shoddy by Canadian manufacturers, how are you to keep out the foreign manufacturer, who uses a greater proportion of shoddy than we do? There would be no way of determining how much shoddy these imported cloths contain. That was the difficulty with the Grosvenor

Shoddy Bill brought before the United States Congress. It was found that it would not touch the chief sinner, the foreign manufacturer, and so the Sheep Breeders' Associations themselves dropped the bill.

As to the washing of wool, I have made enquiry from a large number of manufacturers and the general opinion is that manufacturers prefer that the wool be washed, with the provision that it be clipped before the second growth comes in. If the clipping is delayed two or three weeks after the washing, grease begins to develop, which the manufacturer has to remove. It can therefore be marketed as soon after washing as the wool is dry. They also state that unless the washing is thoroughly done, it is better not to wash at all. Some suggest that if the water used contains lime and is hard, it is well to use some preparation which will cut the grease before the washing is undertaken.

Q.—Will wool shrink if left lying exposed after it is clipped?

A.—It depends upon the condition of the atmosphere; wool absorbs moisture readily, and a fleece will increase or decrease greatly in weight according to the dampness or dryness of the air.

Q.—Is a fleece with dark fibres in it more objectionable to the manufacturer than one containing chaff and burrs?

A.—This depends on the class of goods to be manufactured from it. If a pure white stock is required, the color of the wool is of course of the highest importance, but if dark or coarse goods were being manufactured, chaff and dirt would be the more serious of the two objections.

I have received many letters from Canadian woollen manufacturers making suggestions to sheep farmers for improvements in the methods of preparing wool for the market. These letters were too numerous to read, but the most practical suggestions were summarized as follows:—

Improvement can be made in the quality of wool by more care in the selection of stock from which to breed.

Sheep should be sheltered from storms and their fold or sleeping shelter should be on dry ground. Exposure to severe winter weather while the sheep are insufficiently fed is a cause of weak spots in the fibre of the wool. In extreme cases the wool breaks off in the manufacturing processes at these weak spots and becomes practically shoddy.

Leicester, Lincoln, Shropshire, Southdowns, Merinos and Merino crosses are all recommended by various manufacturers according to the special kind of goods made by each mill. The steady market for mutton makes it profitable for the farmers of Ontario, Quebec, and the East, to raise sheep primarily for mutton, with wool as a secondary consideration. The Cotswold breed shows a heavy carcass and fleece, but requires more care and better pasture and the wool is too coarse for most Canadian requirements.

Sheep should be kept in clean fields and not allowed to run in roads where burrs abound; nor should they be allowed to run about straw stacks where their fleeces get filled with chaff. The reason of this is that burrs and chaff, etc., have to be taken out either by hand or by clipping away valuable parts of the fleece, entailing loss of time, or it has to be put through the carbonizer, which weakens the wool more or less. This is a serious matter to mills having no carbonizing plant, and the manufacturer would in any case prefer to pay a high price for clean wool than a low price for burry or dirty wool.

If the sheep are exposed to long rains or stand under the eaves of sheds or barns, the yoke of the wool is washed out and this is a cause of "cots" in wool, which depreciate the value of the fleece to the manufacturer.

Wash well or not at all. Tub washing is condemned by many manufacturers. Wash in clear, soft water, or if only hard water is available, it can be softened by soap suds being poured over the fleece and washed off. Wash as soon after warm weather sets in as can be done without danger to the health of the sheep. The quality of the fleece deteriorates rapidly in Canada when the hot weather sets in. In cold districts, or in very cold seasons it may be better to shear without washing. After washing, shear as soon as the wool is dry. For reasons before given, the value of the fleece is damaged by too long delay in shearing.

Do not brand sheep with paint or tar on the wool. The painted or tarred spots cannot be cleansed by ordinary processes and the wool of that part of the fleece is spoiled.

Do not tie a fleece with binder twine. It gets mixed with the wool, to the damage of the goods, because the dye does not take the same on this fibre as it does on wool. Use cotton twine and roll up fleece with the flesh side out. Odds and ends of wool should be tied up by themselves. Cleanliness and care in these respects will well repay the sheep raiser.

THE FARM LABOR PROBLEM.

By THOMAS SOUTHWORTH, DIRECTOR OF COLONIZATION, TORONTO.

All will agree that the farm labor question is a most serious one. Not only is it very difficult to get experienced farm labor, but there is difficulty in getting labor of any kind. This state of affairs is likely to continue because of the trend of farm labor to the Northwest and Northern Ontario, and because our public works are giving employment to large numbers of men. The Minister of Agriculture, who at present has charge of immigration, is fully aware of the situation in this regard, and is making extra efforts this year to relieve the situation. Over 30,000 immigrants arrived in Ontario during 1905. The only immigrants the Government encourages are those who will work on the farm, either for themselves or for others. As soon as they arrive at the port of debarkation, they are inspected by the Federal authorities. We are advised by telegram as to the number coming to Toronto, and on arrival, they are met at the train by our officers. They are taken to our office, examined as to their qualifications, and afterwards despatched to the farmers who have made application. We try to fit the immigrants to the applications so far as possible. Some farmers, for instance, are able to accommodate married men, others want single men; some want experienced and others inexperienced men, and we try to meet their requirements. We advertise the fact through various agencies, such as the Farmers' Institute, that we are prepared to supply labor. When application is made to us, a blank form is sent to the applicant, so that he may fill out the particulars of what is required and return it to us.

We have very few special agents in the Old Country, but we are in constant communication with various philanthropic agencies and with the agencies of the Federal Government on the other side, and we advise them as to the class of people we are able to place here. In this way we are able to select immigrants. The Salvation Army is one of the agencies to which I refer. This organization has a large number of depots throughout the United Kingdom. The Government has subsidized this organization to some extent and we find it a very satisfactory agency to work through. The time

has been so much taken up this morning that I have not time to go fully into this matter, particularly as Brigadier Howell of the Salvation Army, who is to follow me, will doubtless give a full statement as to the methods of that organization in receiving and distributing immigrants.

BRIGADIER HOWELL, Secretary of Immigration, Salvation Army, Toronto: It is only right for me to say that any assistance the Army has been able to give to farmers in Ontario has been largely owing to the efforts of Mr. Southworth, who placed himself in touch with us and instructed us as to the particular requirements of this branch of immigration work, and as to the needs of the farmers in this Province. For the last two years the Army has closely followed up the matter. Previous to that time we assisted a few deserving families to this country. These sent home word to their friends and relatives, and we soon found ourselves besieged with enquiries, and that we were an immigration agency without knowing it. Having so many agencies dealing with all classes of humanity, we found we were specially fitted for selecting emigrants of the right class. The difficulty we then had to face was to place them properly when they arrived in this country. This difficulty was overcome by co-operating with the authorities here. The Army authorities in the Old Land, the Federal Government, and afterwards the Provincial Government, came to our assistance financially, so that it is now possible for us to work in a very effective way. So far as selection is concerned, we are very strict in seeing that the proper class of people is sent here. We are well aware of the fact that the "submerged" class must be dealt with by social institutions in the Old Country. The man who comes to this country for a fresh start in life must be a man with some ambition and ability, and he must come prepared to accept a very moderate rate of wage. One of our difficulties is that the people who come expect much in the way of wages when they do not know very much. That is particularly the case with men who have had experience in the Old Country, but it applies to all classes of help. Methods of farming in this country are so different from those in vogue in the Old Land that an experienced man coming to this country is not worth as much when he comes here as one who was born on the ground; in fact, I find that many inexperienced hands prove quite as capable as some of those who are called experienced.

We trust very much to the honor of the farmers to treat men right. All we ask is that if a man is worth ten dollars, you should pay him ten; if you believe he is worth twenty, pay him that. We believe that the farmers will pay a good man what he is worth, because such a man is a good investment for him, and it is to his advantage to keep such help as long as possible.

It is absolutely necessary, if farmers desire to keep their help, and to get the best returns in the way of labor, that they should be looked after properly and be properly housed and fed. I find the idea is common in some parts of the country that any place will do for the hired man to sleep in; sometimes an out-house is considered good enough; and the board is often not as good as it should be. Unless a man is made comfortable and feels at home, the best returns in the way of labor cannot be obtained from him.

Q.—Is that general in all parts of the Province?

BRIGADIER HOWELL: It is rather the exception. I believe that as a class Ontario farmers know how to treat their help right. But occasionally an exception is met with, and the man who suffers writes to the Old Country newspapers giving his experience, and this does the country very much harm. It is these exceptions that are injuring your reputation.

I find there is a great demand for single men. I have tried as far as possible to encourage farmers to take married men, as I think they are a

profitable investment. If you have not accommodation already for married men, it will, in many cases, pay you to put up houses especially for them. In the first place, a married man is likely to be far more permanent than a single man. A single man will work for a few months at ten dollars a month, and then someone else comes along and offers him twelve dollars and he leaves you. If a man is married and you are interested in him and treat him right and make him feel at home, the chances are he will stay with you. Many of the men who come out, especially experienced farm hands, have the idea of remaining permanently on the farm to which they go and they are not disposed as a rule to move around.

So far as we can lend our organization for the purpose of bringing to this country the right class of people, we are only too ready to do it, as we believe we are doing God's work in this particular, just as much as in any other class of work we undertake. We should like to have it known throughout the country that, so far as we can lend ourselves to the Governments and help the people to meet this great difficulty, you may depend upon us doing all we possibly can. We ask for your co-operation, and that you should treat the people as they should be treated. I believe that now the attention of so many emigrants is being directed to this country, we should do our best to encourage it, especially the immigration of English-speaking peoples. When they arrive here we should do all in our power to help them and make good citizens of them. We all want to see Canada go ahead and we cannot do that without more people, and we must have the right class of people. As your Premier very truly said, the last century was that of the United States because of the tremendous flow of immigration to that country, but that the present century would witness a similar development in this country.

In order to secure immigrant help, application should be made either to the Bureau of Colonization at the Parliament Buildings, Toronto, or to the Army headquarters in Toronto, as we work together in this matter; and although we have been instrumental in placing nearly 3,000 people on the land, I do not know that we have clashed with the Government's efforts in any single instance.

MR. SOUTHWORTH: I omitted to state that in case an immigrant is sent in response to an application, his transportation is paid by the Government from Toronto to the station nearest the farm to which he is going.

MOST PROFITABLE METHODS OF FEEDING BACON HOGS.

BY T. H. MASON, STRAFFORDVILLE.

The business of hog raising is an easy one to jump in and out of, and because of what may be called its speculative tendency, it is a regrettable fact that our farmers do not stay with it year in and year out. The backbone of success of the hog-raising business is, as we know, the export trade, and the demands of that trade certainly deserve our consideration. In spite of the work that has been done by the Winter Fair and other organizations, a great many farmers still think that the demands of the packers are not in their interests, and that the farmers and packers are antagonistic. The packer asks for a hog weighing 160 to 220 pounds, because it is best suited to the demands of the British market. Many think that this is not a profitable type of hog to produce. I think, from the result of my own experience,

running back for twenty-five years, that this is an entirely erroneous opinion, and that, on the other hand, the class of hog asked for by the packers is the most profitable class for us to produce, because, after you pass the 200 pound mark, it becomes increasingly difficult to make a profit on the food consumed.

Regarding the question of breeds, I may say that I think the purely American breeds are unsuited to our conditions. These breeds have been developed for the purpose of producing pork for an entirely different market to ours. They have been evolved in the great corn belt of the middle west, and are suited to the purpose of converting corn into lard, and they are therefore unsuited to the requirements of the particular bacon market to which we cater. That these breeds are easier to fatten and cheaper to produce than what are called the English breeds, I do not think will hold good in actual experience. I do not think, however, that there is so much difference, so far as cheapness of production is concerned, between the different breeds as there often is between individuals of the same breed. This fact makes the question of selection a very important one, and care should be taken to produce only from the best.

The mistake is often made of weaning young pigs too soon. If you have plenty of skim milk and plenty of time to look after your pigs, you can successfully wean at quite an early age; otherwise it is the best policy to give the pigs a good start in life by not weaning them too soon. The sow should be liberally fed during this period. I would not wean under eight weeks, and in the fall of the year not until ten or eleven weeks. At three or four weeks you should begin to teach the young pigs to eat a little scalded wheat middling, wheat, shorts and a little oil meal. Then by the time they are weaned they will be doing well and should grow right along. This is the critical period, however, as if they go wrong at that point, the profit in the undertaking is likely to be lost.

I am a strong believer in growing pigs rapidly. Some people think they get better quality by allowing them to stand still for a month at a time, or that they will get some advantage later on from a turn in the market, and therefore they keep them until ten or twelve months old. I do not think this is a profitable policy. It has been clearly demonstrated that there is an increase in the cost of production per pound, live weight, with the increase of weight and age. I like to keep my pigs growing from start to finish and have them ready for the market at six or seven months. My plan is to make as much use of pasture as possible during the summer months in raising hogs. For pasture I use clover, rape, peas, and oats or vetches, and in this way my hogs consume a large quantity of cheap green feed as a part of their ration. I hold that pasturing tends to promote thrift and to produce better bone and muscle and a better constitution; besides this, it saves a good deal of labor.—which is one of the problems in connection with farming at the present time,—and results in all the manure being applied direct to the land, which is an important consideration. It is claimed by some that better results are secured after hogs reach a weight of 100 to 125 pounds by finishing in the pen. Possibly this may be so. We have obtained the best results by allowing them to remain on pasture to the end of the period, feeding grain liberally twice a day and allowing them plenty of water. We have no trouble under such conditions in getting them in proper condition for the packer. They never go off their feet nor off their feed under these conditions, which is a very strong argument in favor of this method of handling. If you are in the hog business to any extent, it will be found a desirable practice, in sections where peas can be grown, to turn the hogs

into the field when the grain is about ripe and allow them to harvest the crop. This saves labor and gives very satisfactory results.

I have had some experience in purchasing store hogs, but on the whole it is not satisfactory because of the difficulty in getting satisfactory quality. I cannot do my own buying, but have to buy through the local drovers, and I find that I get too high a percentage of bad feeders among them to make it profitable. Unless conditions are very favorable, both for buying and selling, I do not think it is a very profitable practice, and I find I can make more money breeding my own hogs than in handling a large percentage of my neighbors' culls.

Q.—Do you sub-divide your fields in pasturing?

A.—I have small fields; if they were large, I would sub-divide them.

Q.—Do you give your feeding pigs exercise in the winter time?

A.—We have a yard to which they have access for an hour or two each day.

MARKETING BACON HOGS.

The subject "Marketing Bacon Hogs," was taken up as follows:

(a) "The Necessity of the Producer Being Paid for His Hogs According to Quality."

(b) "The Advantages of More Even Prices for Live Hogs being Maintained Throughout the Different Seasons of the Year."

(c) "The Difficulties of the Packing Houses in Meeting the Producers' Demands."

(a) THE NECESSITY OF THE PRODUCER BEING PAID FOR HIS HOGS ACCORDING TO QUALITY.

BY DUNCAN ANDERSON, RUGBY.

The management of the Winter Fair this year made a change in the programme in regard to the hog question, and, in my opinion, this change has been made none too soon. Hitherto the time has been devoted to telling farmers what kind of hog the market calls for; this time the farmers are given an opportunity to tell the packers what they think of the conditions governing the marketing of hogs. The farmers are not satisfied with the conditions governing the business of marketing. There is too wide a range between the highest and the lowest prices throughout the year. I do not object to the average price during the last five years, but it would give better satisfaction to the producers if prices throughout the year could be made more uniform. A range of all the way from 7½ cents at one time of the year to 4½ at another is altogether too wide, and we claim that there is no need for prices to fluctuate to such an extent as they do.

We also object to the present system of buying hogs. As Mr. Dryden said last night, the man who puts skill, intelligence, and ability into his work ought to be paid for it. The farmers ask that hogs shall be graded at shipping points and paid for according to quality. We are not paid for it under the present system of buying. In my section a flat rate is paid for all hogs under twelve months old, whether they are thick and fat or lean and unfinished or grade as number one. I believe that if the packers do not make a change in this respect, the farmers of this country will go back to the old

style of hog. I am as closely in touch with the farmers as any man in this Province, and, while I sincerely hope that it will not be done, I warn the packers that the farmers are proposing to go back to the thick, fat hog. It is contended that it is no more expensive to put the bacon type upon the market than it is the thick, fat type. This may be true if both kinds are fed in pens. If they are pastured, however, it is my opinion that, under average summer conditions, the old style of hog can be finished cheaper than the bacon breeds. The packing of Wiltshire sides was the brand chosen by our packers. Canada has been committed to it. Much education and experimental work has been done through the Winter Fair, Institute lectures and demonstrations as to desirable and undesirable types. To such an extent has this work succeeded, that, at the present time, nearly 80 per cent. of our output makes Wiltshire bacon. If the farmers take the course which is now proposed, it will be almost a national calamity. I claim that the packer has the remedy in his own hands, and must remedy present conditions before it is too late. Some years ago in our section, hogs were graded and discrimination used in purchasing. We were paid 25 to 30 cents per hundred more for No. 1 hogs than for thick, fat hogs, and were pretty well satisfied, but, during the last four years, drovers have been paying the flat rate. In other lines of production the article is paid for according to quality. Take wheat on a basis of 80 cents a bushel: 78 cents will be paid for wheat weighing 56 pounds to the bushel and 82 cents for wheat weighing 62 pounds. If the miller can buy according to quality, why not the packer?

Q.—When hogs were culled, what did you get for them?

Mr. ANDERSON: That has nothing to do with the question, as all products were lower at that time. It is stated that packers cannot agree as to the system of grading. They seem to be able to agree well enough on some things. At one time I supposed that there was only one kind of barometer—the kind that foretold weather conditions—but it would seem that the packers have invented a market barometer, which is located in the bacon factories of this country. By its means the packer is able to predict six weeks ahead what the price of bacon will be. Do you think that they are always correct in their forecasts? Would it not be wiser for the packers to take some of us into their confidence and ask us what we think of the business, and try to arrange for a more satisfactory and uniform scale of prices.

There is another matter which has been brought to my notice, namely, that during the past summer a number of American hogs were brought to this country, slaughtered in bond, and packed in boxes labelled "Canadian Cured American Bacon." After all that has been done at the request of the packers themselves to educate our people to produce the class of hog they desire, we now find them bringing in animals of the very reverse type—the kind that they formerly decried as making the lowest grade of inferior bacon—and sending it to Great Britain to affect the standard of our product in that market. Some of these hogs are bought in Buffalo and some in Chicago, where they come from the western corn belt. They are the scavenger hogs of that country. The contention of the packer is that a sufficient number of hogs is not raised in Canada, and that they have plant capacity to pack nearly twice as much as they could get in Canada. In the face of this scarcity, we find two large pork factories starting business in Montreal, one only a few months in operation and the other in course of construction. The packer claims that in order to keep his factory running when hogs are scarce in summer, he must import American hogs. If this is continued, it means

that prices will be depressed at the time of the year when we have been accustomed to seeing them highest, and thus the average price for hogs will be lowered. I contend that with the present system of importing in bond, packers will not improve in their methods of buying.

There is still another phase of the question which is that with these importations there will always be the danger of introducing hog cholera and other diseases, notwithstanding the best efforts of the Dominion Veterinary Inspection Department.

Q.—In my neighborhood they are going out of the hog raising, because there is no discrimination in prices. I remember that on one occasion when prices were running to $5\frac{1}{2}$ cents, the drover told me that prices would be down in the next two weeks. Two weeks later they were down to $4\frac{1}{4}$, and all the hogs in the neighborhood, good and bad alike, were bought at that figure. It is this sudden fluctuation in price and lack of discrimination in quality that is ruining the hog raising industry.

***(b) THE ADVANTAGES OF MORE EVEN PRICES FOR LIVE HOGS
BEING MAINTAINED THROUGHOUT THE DIFFERENT
SEASONS OF THE YEAR.**

By G. E. DAY, PROFESSOR OF ANIMAL HUSBANDRY, O.A.C., GUELPH.

I do not consider that the taking of an average price for hogs throughout the year is a fair indication of the farmers' profits or losses, for the reason that there is such a wide variation between the highest and lowest price. The man who has a lot of hogs to market when the price is at the lowest will take very little consolation out of the average price. Mr. Anderson raised the question whether it would not be possible for the farmers and packers to get together and arrange for more uniformity in prices. Why should not the farmers and packers combine in this matter for their mutual interest? That is the sort of combine I should like to see established. In co-operative countries like Denmark, the price paid for hogs is not regulated by the price of the product on the English market, but they try to pay a fair average the whole year round and to keep prices fairly uniform. As a matter of fact, they are sometimes paying more and sometimes less for hogs than the English market warrants. There is no doubt that many farmers are discouraged, and are going out of the business, because of the fact that, when hogs are plentiful, prices are low, and high only at the season when they are very scarce.

The question is often asked, "what does it cost to raise hogs?" We have been investigating this matter at the College, and while the work is not complete, I should like to present a few figures for consideration. The price of a brood sow at eight months will probably be about \$12. After you are through with her, if she has been well cared for, you can probably sell her for about the same amount; so that her cost may be left out of the calculation in figuring on the cost of finishing hogs for the market. The size of the litter will have an influence on the cost of raising the pigs, and, to be on the safe side, we will estimate that two litters are produced per year, with six pigs to each litter. I am leaving the element of risk out of this calculation. It is so very uncertain that it is better for you to estimate it at what you like. If she raises two litters a year and suckles each for six weeks, there will be nine and a quarter months during which she is not nursing pigs, and it is

* See page 115.

necessary to estimate the cost of maintaining her during that period. In summer she may be left out on pasture and will cost practically nothing, but, for the purpose of the estimate, we will say that she costs 75 cents a month, or a total of \$6.94, although I believe she can be maintained for less. For the cost of maintenance during the two nursing periods of six weeks each, we have actual figures from five experiments. In these experiments we estimated the cost of meal at \$20 a ton. On this basis we found that in these five experiments the cost of keeping the sow and litters during the nursing periods ranged from \$3.04 to \$3.87, or an average of \$3.40 for each litter; thus costing us, including service fees, a total of \$15.74 for the year. If we divide this amount by the number of pigs raised, which is assumed to be twelve, we find the average cost of production of each, including the cost until they were weaned, to be \$1.31.

The next question is as to the cost from weaning time to maturity. We have no figures yet as to the particular pigs experimented with up to the age of six weeks, but we have the cost of carrying over pigs under similar conditions from six weeks old to maturity. The results are based on feeding the different pens of pigs on mixed meal at \$20 a ton, blood meal at \$55; tankage at \$33, and skim-milk at 15 cents per hundred pounds. In these experiments we fed no green food or roots, which, from the standpoint of economical feeding, is bad practice, and the experiments in question will not show the cheapest possible gain, but, nevertheless, they will be useful for our purpose. What we found in these experiments was that, on the average, it cost us \$4.52 per hundred to finish these hogs at a little over eight months, including cost of bringing them over the weaning period. If we had bought these pigs at \$2.50 each, they would have cost \$5.20 per hundred, which shows the advantage of raising one's own pigs. What the farmer would receive for his labor and interest on capital—taking no account of the risk and the value of the manure—would be the difference between \$4.52 and the selling price, whatever that might be. A more encouraging experiment was conducted with fifteen pure-bred Yorkshire pigs. The cost of rearing this lot up to the time of weighing 149 pounds was \$3.86 per hundred. At this point the experiment had to be discontinued because the hogs had been advertised for public sale. If, however, another forty pounds had been added to their weight at a cost of five cents per pound, it would have made the total cost of bringing them up to 189 pounds only \$4.10 per hundred weight. I do not offer these figures as final, but to give you something to think about. If the experiments I have quoted demonstrate nothing else, they show clearly that the last 15 animals were a long way better bacon hogs than many of the others we fed, and yet they made cheaper gains. For a pig to make cheap gain, give me the growthy strong-boned hog every time and you may take the flat back, thick dumpy hog and do what you like with it. People come to me and say that this latter type can be grown more cheaply, but they do not prove it. I do not think the particular breed has anything to do with it; what you want is the growthy, long pig with plenty of bone and muscle.

J. E. BRETHOUR, BURFORD: It is very evident that the packer and the farmer look upon this question from different points of view, and the bringing of the two together at a meeting of this kind is exactly what we want. There should be no ill-feeling or misunderstanding between the farmer and the packer, because they have a mutual interest in the business. If the packer is making money, the farmer will get a little of it; if he is losing money, the farmer will lose also. This is the situation as I see it at the present time. I find that farmers everywhere are declaring that they are

going back to the thick, fat hog because the packers are paying no more for the right kind of hog than for the fat one, and it is less trouble to raise the latter; they do not have to buy high priced pigs nor do they have to give them as much attention. Prof. Day says that it costs no more to feed the right kind than the inferior hog, but there is a good deal more skill required in feeding and caring for the desirable hog. It requires brains, and I think that the farmer or breeder who is producing the right type should get adequate reward for his work.

There are too many obtaining money out of the bacon business between the farmer and the packer. I do not know who is to blame, but the condition exists. I have no remedy to offer, but I know there is a considerable discrepancy between what the farmer gets when he delivers his hogs at the station and the price the packer pays for them in his own yard. I admit that the packers are paying a fairly high price for the product laid down in the yard, and I believe that they are paying more for their product than it should cost them, but the farmers are not getting the benefit of it. With regard to slaughtering American hogs in bond, I have correspondence to show that American corn-fed bacon has really been sold as Canadian in the English market. At the present time this cannot be overcome because the meat is cured and packed in this country, and the boxes are branded while the sides are not. Possibly this objection might be overcome by having the sides branded "American Corn Fed."

I consider that if American hogs are brought in in large quantities in cars which are afterwards used again for shipping our own stock, the danger of introducing disease is a very grave one.

One of the conditions we must bear in mind in discussing this question is that hogs can be produced cheaper in the spring and summer so as to be ready for fall delivery than at any other period of the year. If they are produced for sale at any other season, the cost is very much greater. Unfortunately, prices in the autumn are always very low. The result is that the farmers, finding that prices are always low at the season of the year when the bulk of the product comes on the market, are becoming discouraged and dropping out of the business. It is not the price a few individuals receive that counts, but what is paid for the great bulk of the hogs marketed. Farmers would sooner take a lower average price provided it is more even.

*(c) THE DIFFICULTIES OF THE PACKING HOUSES IN MEETING THE PRODUCER'S DEMANDS.

BY DR. F. J. SMALE, ASSISTANT GENERAL MANAGER, THE WILLIAM DAVIES Co. LTD., TORONTO.

For a number of years the packers have had the right to import to Canada and to kill in bond American hogs, and when 60 or 65 per cent. of the product was shipped to the English market, the bond was redeemed by the shipment. Previous to 1890 this privilege was freely taken advantage of and large numbers of American hogs were imported. Afterwards the Canadian product increased to such an extent that it was unnecessary to import these hogs, and from 1892 until last summer no advantage was taken of the opportunity to do so. During last summer, owing to the shortage, certain packers introduced American hogs, cured the product and sent it to England. If it had been retained in this country, these hogs would have had to pay a

* See page 115.

duty of \$1.50 per head but, by exporting the product, they were passed duty free. A number of safeguards have been placed about the trade in order to protect the Canadian farmer and breeder. The hogs bought have to pass veterinary inspection at Buffalo, and a Government Inspector at the packing house sees that none of the hogs are allowed to get out into the country. The cars in which they are brought to this country are thoroughly cleaned and washed with carbolic acid and whitewashed under the direction of a veterinary surgeon, and they are then returned to the United States. For fifteen years American hogs have passed through Canada from Detroit to Montreal, and there has been quite as much danger of the spread of disease from these shipments as from the importation of hogs for slaughter.

As to the sale of the American product by Canadian packers, the company I represent contends that every side of such bacon coming from a Canadian packing house ought to have branded on it the statement that it is the product of the American hog. If it is so branded that it may be clearly distinguished, there will be no danger of its being substituted by the large dealers over there when selling to the retailer. I heartily agree that every precaution should be taken to prevent injury to the standard of Canadian bacon in England. So far as the American and Canadian product is concerned, they are as different as daylight from dark, and are in absolutely different classes. The difference in price between American Cumberlands and Canadian Wiltshires is twelve shillings per hundred weight. I have as much pride in the industry as any one, and I can assure you that, if the imported product is branded in the manner I have suggested, there is no risk to the reputation or sale of the Canadian product. The product of 65,000 hogs a week—American bacon in Cumberland and Wiltshire sides—is sold on the English market; so that it is no new product that we are placing on that market; it is there already, and there is no possibility of the Canadian trade suffering if the product is properly branded, nor will there be one cent lost to the Canadian farmer on that account. On the other hand, there is an advantage to the Canadian producer in having these hogs come in because by their means we can keep our men more regularly employed and reduce the cost of production; which is an advantage both to the packer and to the hog producer.

Q.—Would not the packer rather have Canadian hogs?

A.—Of course, but he is unable to get them.

Q.—Discriminate in the price and you will get them.

A.—But it is a question of to-day, not six months hence.

Q.—We ought to have intelligence enough to look ahead. If you will take these farmers into your confidence and co-operate with them, they will give you the hogs. (Hear, hear.)

A.—The production of hogs twelve months from now does not affect the problem of to-day. To-day many of our men are working on half time. One speaker stated that this was the fault of having too many packing houses. I accept that contention, but at the same time the packing houses are here and the organization is here. This being so, I leave it to you whether it is not fair to allow us to buy what raw material we require, no matter where it comes from, if it enables us, by putting a little labor upon it, to enhance its value and make us a little money, and give our men more work, especially when the farmers are suffering no loss thereby.

Q.—We say that your system of buying is wrong, and you will change it, we will give you all the hogs you want, but you will never change your system so long as you can buy American hogs.

A.—Your argument is that the lack of grading of hogs has for its result a lessened production.

Q.—Yes, the lack of grading and the wide range of prices.

A.—I believe that the question of grading hogs is not a packer's question but a farmer's question.

Q.—It is both.

A.—The argument of the gentleman who has spoken is that it is the packer's fault. I maintain that it is a farmer's question. It is your finished product and our raw material. We call for a certain raw material, and say, if you will produce that, we will hand it to the consumer in England and there will be a profitable trade for you that has not heretofore existed. The packer is not able to add a quarter of a cent to the value of the bacon after it leaves his hands. He makes just as much money out of the bacon, no matter whether it is of the thick, fat or of the Wiltshire type. It is not in that sense then a packer's question, but it is a packer's question in the sense that the packer has a common interest with you, and is desirous of bringing Canadian bacon up to a point where it will take second place to none, and he is willing to help you with information in order that this may be accomplished. If the farmers cannot see that it is dollars and cents in their pockets to raise the right kind of hog, then the packers cannot show them that it is. You can breed the American type of hog if you wish, but you will get from ten to fifteen shillings per hundred less for it.

Q.—But we do not get any less for it.

A.—If you elect to raise the class we require, you get a higher price for your product. The more nearly you reach 100 per cent. of that class, the more you will be paid for your product; that is self-evident. The larger the percentage of fat hogs that are marketed, the lower will be the place which the product will take in Great Britain. Our price now is several shillings ahead of the American, and but a few shillings behind the Danish. It makes no difference to us, as packers, whether we are higher or lower in the scale, because the price we pay you depends on the price we receive in England. We are endeavoring to secure a profit on the operation in any case. During the last six months, while there has been no culling of hogs, only 18½ per cent. of the hogs received at the Wm. Davies factory were below the bacon standard, and that during a time when an unparalleled number of light hogs was received. There never was a time when we were receiving so many well-bred hogs as to-day. Mr. Anderson stated that when culling was being done there was a difference of 25 cents in favor of a first-class hog over a hog that was fat or light in weight. I want to ask him whether the farmers in his neighborhood when they have a number of unfinished hogs among the bunch and the drover offers six cents for them, while he pays someone else \$6.05, what would be their attitude to the drover afterwards.

Q.—The next time they would take them home and finish them. I have seen, when there is discrimination in buying, farmers take home two out of the lot because they were light in weight.

Q.—When I obtained ten cents extra for selects, I never marketed a hog until it was ready.

A.—That is the point. You would refuse to sell. The scarcity of hogs has been such during the last five years, that the buyer had either to come up in his price or go without the hogs, and five or ten cents a piece on our hogs has been neither here nor there, because there were not sufficient hogs to go round. It has been possible to raise the price ten, or fifteen cents by refusing to sell. Under these conditions, it has been impossible to cull hogs unless under exceptional circumstances at the factory. So long as the packers

have to scramble for hogs, as they have been doing during the last five years, and until farmers produce more hogs, a system of grading cannot be established. I am satisfied that the lack of hogs to-day is not the result of any lack of grading. The real reason is that twelve or fifteen months ago the farmers believed that there was no money in hogs. Our farmers are too prone to follow the American plan of going in and out of things, depending on market fluctuations. The consequence is that they are too often out when hogs are high and in when they are low. The question comes down to this, do you believe that hog raising, year in and year out, pays you? If you do not, you will go out of the business. If you do, you will remain in the business year in and year out. Prof. Day has given you some figures as to the actual cost of producing hogs. On that basis the average price for the last five years shows a profit of twenty per cent., with a maximum profit, when prices were high, of forty per cent. It shows a return on barley fed at 58 cents a bushel or ten cents more than the market price or, at the best figures, of 20 cents a bushel more, and from 15 to 30 cents more for peas converted into hogs.

Q.—Would it not be possible to have more uniform prices?

A.—The difficulty is that prices in England are as variable as the prices for hogs in Ontario. It is said that many farmers have not been able to make advantage of the average price of \$5.70. The packer is not to blame for that, however, but rather the producer, who fails to keep up a more regular supply.

Q.—Mr. Brethour stated that the farmers do not get full advantage of the prices you pay for hogs, and that such of what would otherwise be profit goes to the middleman.

C. W. BOWMAN, Manager Montreal Packing Co., Montreal: The packers are trying at the present time to remedy this abuse in the trade. Steps have been taken and are being taken by the packers—to some extent collectively—to overcome this evil.

One speaker referred to the packer's barometer, and ridiculed the idea. The packer has to take care of himself, and therefore he must attempt to estimate the market six weeks ahead. He has given the farmers an average price of \$5.70 at their station, and I contend that this is a fair price.

Q.—Who pays for the shrinkage of hogs in the shipping?

A.—It depends on the method of purchase, sometimes the packer and sometimes the drover. Mr. Anderson intimated that packers got together in the matter of prices. He took as evidence the fact that when the price goes down, it goes down at all bacon points simultaneously or nearly so. Of course packers raise and drop prices all at the same time. This is true of other commodities, such as cheese for instance. There is no organization among the merchants, but a similar result is seen in the price of the commodities they have for sale. Supply and demand regulates price. We do get together once in a while, but it is pretty much like football players getting together.

Q.—Do you say that you do not endeavor to agree as to price?

A.—There is the keenest competition between packing houses for hogs at the present time, regardless of price.

Q.—Was that the case at this time last year?

A.—It has been the case for many years. There has been no arrangement. I have been connected with the packing business for fifteen years, and there has been nothing in the shape of a combination among packers during that time as regards price. They do meet together to regulate matters

connected with the business, but there is not a packer in the country who will allow anyone to dictate to him what price he shall pay.

Q.—Then there has been no arrangement between packing companies as regards prices.

A.—Not as a packing association. I will not say that one packing house will not call up another and talk over matters generally.

Q.—Is it not a fact that prices are set in Toronto, and that the packers all take Toronto prices as their guide.

A.—No, it is not true. Toronto is undoubtedly the largest packing centre in Ontario, and naturally controls the price to a larger extent than does any other point, but many times outside houses have dropped and raised prices before the Toronto people have.

Q.—If there is no arrangement, how is it that before the Brantford Packing House went out of business, hogs were bought there and shipped to Toronto at 25 to 50 cents more than that company could afford to pay?

A.—I do not know enough about the conditions at that particular time. It may be that the packers wanted to close out that company. I will say that, during the time the Brantford Company was operating, I do not think any of the packers lost money, as business was never in a better condition.

Q.—Will the packers pay the farmers the same price for hogs delivered at the factory at they pay the drover?

A.—I do not see how farmers can deliver to the factory unless they are living nearby.

Q.—I can deliver mine.

A.—It is necessary for the packers to have representatives in the country looking after their interests, and these men have to be paid either in salary or in commission. No hogs are delivered to my company in that way, but while I was in Ingersoll a great many hogs were so delivered.

Q.—The middlemen of whom we complain are usually not your representatives.

Q.—At one time the farmers in our section delivered thousands of hogs to the local packing house, but we found we could get more from the drover who shipped to Toronto or Montreal.

Q.—Does the number of hogs in sight in the country affect prices?

A.—Yes, and it is right that it should do so. If the supply decreases, prices naturally advance. If the supply goes beyond the capacity of the channels through which we sell, depression naturally follows.

Q.—Then your channels are not large enough?

A.—If the supply is regular, yes; if it is irregular, no.

Q.—If you can guarantee us a uniform price, we will give you uniform supply.

Q.—Why did prices advance so much in 1900 and 1901?

DR. SMALE: That advance was because of the Boer war. Prior to that war prices had been low and production had very generally decreased. The war suddenly advanced prices, and with the advance there was a rush back into production in Denmark, Ireland, the United States, and Canada. With this increase of supply prices naturally fell off again. If you will give us a regular supply and a steady increase in the volume offered, we will place the product on the old country market, but we cannot keep up the demand for your product where the supply is irregular. If we do not keep up a regular supply to the old country buyer, he turns to other sources from which the supply is more uniform.

MR. BOWMAN: The farmers themselves largely control the situation in regard to prices. When they hold back their hogs, they create a scarcity and an abnormally high price. When they rush in supplies, it causes an abnormally low price.

Q.—During last March hogs were bringing about \$5.75; in June they went up to \$7, afterwards declining again. Why was that sudden increase made? Was it for the purpose of inducing the farmers who were then pasturing their hogs, owing to the high price of grain, to start feeding grain again in order to hurry the hogs to the market? Did not the subsequent drop in prices occur as a result of the accomplishment of this object?

A.—The latter drop in prices was due to a decline in the English bacon market.

Q.—The condition of affairs throughout the Province is that the farmers have lost confidence in the hog business from the fact that, when they have a large number of hogs for sale, prices are usually low. If a greater uniformity of prices could be maintained, it would put matters on a much more satisfactory basis.

Q.—Would you be willing to make any arrangement to receive the hogs produced by a combination of farmers? Would the packers be willing to deal with such an organization as they deal with the drovers in a district?

A.—Would the farmers be willing to ship a carload of hogs to the factory without knowing what they were going to receive for them?

Q.—No, they would not. If such a combination were to occur, it would be necessary to arrange by conference what price would be mutually satisfactory. In Denmark the packers and farmers co-operate in this matter.

A.—I should not like to give a definite reply to that question here. It would have to be arranged on a very wide basis. It could not be arranged for a small section only, as it would mean a complete change in the system of buying. I think, however, that the packers would consider such a proposition.

Q.—The way it appears to me is this: The hog business is not essential to the farmer and it is to the packer, and if any proposition is to be made, it seems to me that it should come from the packers.

THE SEED ACT OF 1905.

BY G. H. CLARK, SEED COMMISSIONER, OTTAWA.

Before dealing with the Act itself, perhaps it will be well to mention some of the conditions of the trade in agricultural seeds previous to the passing of the Act, which conditions, it was thought, warranted the introduction of legislation of this kind. We have in the Province of Ontario districts that produce large quantities of alsike and red clover seed. Ontario supplies practically the whole of Canada with clover seed, and, in an average of years, exports to foreign countries about one-half of the total crop. The Toronto market virtually controls the world's prices for alsike seed. Most of the clover seed is grown west and south of a line drawn from Kingston to Sturgeon Bay on the Georgian Bay. The clover seed export trade is of considerable importance in Ontario. In some of the countries to which the seed goes they have seed testing stations similar to the one located at Ottawa. In countries where these exist there has been developed what is called a voluntary guarantee system. Other countries have legislation similar to, or much more drastic than, what we have presented. On this account the

demand in those countries is for the very best seed, and consequently much of the screenings was dumped on the Canadian market. There is, however, in Germany a limited demand for the screenings of Canadian seeds, which is afterwards re-cleaned, the good seed taken out, and sold at a profit. The process of cleaning seed, where it is a very particular one, is slow, and the labor we have in Canada is unfavorable for work of that kind.

Prior to 1902 we had a very large number of complaints from farmers in all parts of Canada, particularly from Eastern Ontario, the Eastern Provinces and British Columbia, regarding the quality of the clover seed supplied to them by merchants. The result of our enquiries led to an equipment being provided for conducting investigation work. We examined a large number of samples of timothy, alsike and red clover seed and the results established were: first, that it was necessary to convince the farmer as to the bad policy of purchasing low-grade seed. After the work of testing had gone on for some time and lectures had been delivered to the farmers through the medium of the Farmers' Institutes, the Department was almost deluged with appeals from Agricultural Societies and individual farmers asking for legislation to prevent the wholesale distribution of noxious weeds as contained in agricultural seeds. I was then instructed to visit the leading seedsmen and secure from them an expression of opinion. The result of my conference with them was certainly very discouraging. Nevertheless, a Bill was drafted, based largely on the results of the work of 1902. After the educational work had been carried on for three years, however, we found from the results of the investigation work that an enormous improvement had taken place in the condition of the trade. This improvement was brought about through the farmers themselves demanding a better quality of seed. On account of this improvement in the trade, it was believed that the Act might be modified in such a manner as would be acceptable to the seed merchant and at the same time accomplish the end desired, so far as the farmers were concerned. I have to admit that, as originally introduced, there was great opposition to the measure from the seed merchants throughout Canada. I believe that the Bill as it now stands is generally approved by the seed merchants. This modified Act received the support of Parliament and came into force on the first of September. It has already had an appreciable influence on the clover seed crop of this year. The larger seed houses have had buyers out through the country buying direct from farmers. These buyers severely discriminated against clover seed containing noxious impurities, and thus some very effective educational work has unwittingly been done.

The standard that is now fixed (Sec. 4), for No. 1 seed of timothy, alsike, and red clover, provides for seed of much better quality in respect to noxious impurities than was provided in the Bill as first introduced. It was also found that provision could be made (Sec. 6) without seriously interfering with established trade customs, so that, in effect, timothy and clover seeds, produced on lands that were exceptionally foul with noxious weeds, might not be retailed for seeding before being re-cleaned; and that the screenings from timothy, alsike, or red clover seeds might be prohibited from sale for seeding in Canada.

Turning to the Act itself, I desire to point out that its object is not to compel farmers to purchase for their own use seeds of a better quality than they desire, except (Sec. 6) in so far as noxious weeds are held to be a public nuisance. The Act is intended to provide the means by which the users of seed may protect themselves against the introduction of noxious weeds on their lands, and to fix a minimum standard in respect to purity and vitality

for timothy, alsike, and red clover seeds that may be represented to be of the first quality, and thus provide the means by which careful seedsmen may protect themselves against the designs or carelessness of unscrupulous seed vendors.

The main provision of the Act (Sec. 3) prohibits from sale for the purpose of seeding any seeds of cereals, grasses, clovers or forage plants unless they are free from any seeds of the following weeds:—Wild Mustard or Charlock, Tumbling Mustard, Hare's Ear Mustard, Ball Mustard, Field Penny-cress or Stinkweed, Wild Oats, Bindweed, Perennial Sow-Thistle, Ragweed, Great Ragweed, Purple Cockle, Cow Cockle, Orange Hawkweed or Paint Brush; and from Ergot of Rye, unless each and every receptacle, package, sack or bag containing such seeds, or a label securely attached thereto, is marked in a plain and indelible manner:—

- (a) With the full name and address of the seller.
- (b) With the name of the kind or kinds of seed.
- (c) With the common name or names of the aforementioned weeds, the seeds of which are present in the seed sold or offered, exposed or had in possession for sale.

This, however (Sub-sec. 2), does not apply to the sale of seed that is grown, sold and delivered by any farmer on his own premises, for seeding by the purchaser himself, unless the purchaser of the said seed obtains from the seller at the time of the sale thereof a certificate that the said seed is supplied to him subject to the provisions of this Act.

Sec. 4 provides that no person shall sell or offer, expose or have in his possession for sale, any seeds of timothy, red clover, alsike, or any mixture containing the said seeds, in or from any receptacle, package, sack or bag upon which is marked "No. 1," or any other designation which represents such seeds as of first quality, unless they are free from the seeds of weeds named in section 3 of the Act, and also free from the seeds of White Cockle; Night-Flowering Catchfly; False Flax; Canada Thistle; Ox-Eye Daisy; Curled Dock; Blue Weed; Ribgrass; Chicory, and contain out of every one hundred seeds not less than ninety-nine seeds of the kind or kinds represented, or seeds of other useful and harmless grasses and clovers of which ninety-nine seeds, ninety must be germinable.

Sec. 6 provides that no person shall sell, or offer, expose or have in his possession for sale, for the purpose of seeding in Canada, any seeds of timothy, alsike or red clover, or any mixture containing the said seeds, if the seeds of the weeds named in Sec. 3 and 4 of this Act are present in a greater proportion than five to one thousand of the seed sold or offered, exposed or held in possession for sale. The minimum standard of five to one thousand of seeds sold or offered for sale for seeding in Canada, would allow of the seeds of weeds named in Sections 3 and 4 approximately, 411 in one ounce of timothy seed; 212 in one ounce of alsike seed; or 92 in one ounce of red clover seeds.

A clause (Sec. 5), is also inserted allowing a margin of tolerance in any seeds sold under the Act, so that their character may not be affected as being within the meaning of the Act, free from the seeds of the weeds named. This margin of tolerance is made necessary because of the natural variation there may be in the purity and vitality of samples of seeds taken from the same bulk lot. It is inserted primarily to protect seed merchants who make an honest endeavour to conform to the spirit and text of the Act.

Sec. 7 states the circumstances under which the provisions of the Act do not apply. Under Sub-sec. C of that section it is provided that seed held

in storage for the purpose of being re-cleaned and which have not been cleaned, exposed or held in possession for sale for the purpose of seeding, shall not be subject to the provisions of the Act. This section will allow a man who grows seed on dirty land to sell the seed to a merchant who has machinery for cleaning it. Some of the worst samples can be graded up to No. 1 quality if this work is properly done.

Sub-sec. D provides that seed marked "not absolutely clean" and held or sold for export only shall not be subject to the provision of the Act. This is for the purpose of protecting seedsmen who have screenings stored in their warehouses so that they may not be held liable should their premises be inspected by the inspector, and samples of same be taken for analysis.

Sec. 8 provides what penalty shall be imposed where persons are convicted under the said Act. Sub-section 2 of the said section provides that if the accused proves to the magistrate that the package containing the seed concerning which the complaint is made was purchased by him directly from a Canadian seed merchant, and was not opened, or the state of the seed altered in any way while in his possession, and he had no reason to believe that the seed did not comply with the provisions of the Act, he shall, upon disclosing the name of the person from whom he purchased the seed, and the place and date of the sale thereof, to him, not be liable beyond the cost of prosecution. This is to protect the local seed vendor, supposing he should buy, say, fifty bushels of timothy from a seed merchant in British Columbia, asking for seed of the first quality, and afterwards disposes of it in the rush of trade believing it to be as represented. If this seed turned out not to be up to the standard, the local vendor would incur no liability beyond the cost of prosecution. A man who is not doing wrong intentionally, and is taking reasonable precautions, should not be unjustly punished, and this section provides a means by which the party who is responsible may be traced.

Sec. 12. "Any sample of seed taken for official analysis under the provisions of this Act shall be taken in the presence of,—

"(a) the person who sold or offered, exposed or had in possession for sale the said seeds, or

"(b) two impartial or non-interested witnesses, and, in accordance with the rules for seed testing prescribed by the Minister of Agriculture, shall be inclosed in a sealed package together with a certified statement of the person taking the sample, which statement shall include the name and address of the person who sold, or offered, exposed or had in his possession for sale, the seeds from which the said sample was taken, the manner in which the receptacle, package, sack or bag was marked, and the section or sections of this Act in violation of which the said seeds were found or suspected to be sold or offered, exposed or had in possession for sale."

Under this section, if the inspector, when visiting a seed house, takes a sample in the presence of one of the vendors, that is all that is necessary. If a farmer orders seed from a distance and has it shipped to him, in order to take a sample, he must call in two disinterested parties to witness that he has taken the sample from the bag in question. He then seals it in their presence and forwards it for an official test. This must be done before seven days have elapsed since the receipt of the seed.

Sec. 13. Any sample of seeds taken from any seed which is found or suspected to be sold in violation of the provisions of this Act shall be taken and forwarded to an official seed analyst,—

- (a) from seeds that are sold in sealed packages, sacks, bags or receptacles, at the time of the breaking of the seal thereon: and,
- (b) from seeds that are not sold in sealed packages, sacks, bags or receptacles, within seven days from the date on which the seeds entered into the personal possession and became the property of the purchaser.

This section provides that if a farmer obtains seed from a distance, and it is sent him in a sealed package, he may let the package stand so long as the seal remains intact; if the bag is not sealed, however, he must take a sample within seven days as above provided.

Q.—How can a seedsman determine the presence of weed seeds?

MR. CLARK: The Seed Division at Ottawa is prepared to supply specimen collections containing samples of all the weed seeds mentioned in the Act at \$2 per set, for the use of seedsmen, Farmers' Institutes, etc. These samples will enable them to identify any of these seeds without difficulty. We also have pocket collections for seed merchants at \$1.25 a set. Any seed buyer with such a collection in his pocket would have a ready means of determining the presence of weed seeds.

Copies of the Seed Control Act may be had on application to the Seed Commissioner, Department of Agriculture, Ottawa.

PLANT BREEDING.

BY PROF. C. A. ZAVITZ, EXPERIMENTALIST, O. A. C., GUELPH.

The subject of plant breeding is receiving a good deal of attention in many countries of the world at the present time. We have heard a great deal about the breeding of farm stock, but we have not had many direct evidences of work along the line of plant breeding. Our farm crops may be improved by the following means: First, by selecting from the best varieties; second, by selecting the best seed of the best varieties; third, by selecting the best plants from which to select the best seed of the best varieties. This may be carried a step farther by uniting different varieties by cross-fertilization in order to combine the good qualities and eliminate the poor qualities of those varieties.

First, as to varieties, there are a great many different varieties of farm crops. We have grown over 2,000 varieties at Guelph. Some of them we have grown for at least five years, and we find that they differ very widely. We also find that the varieties which give us the best results for five years are apt to give the best results in general practice. Therefore great attention must be given to selecting the right varieties, whether it is in the line of plant breeding or whether we desire to get the best results in the shape of farm crops. As an illustration, I would point to two varieties of oats which are largely grown in this Province, Siberian and Black Tartarian. At the College Farm, taking an average of sixteen years, Siberian has produced 88 bushels to the acre and Tartarian 71½ bushels; a difference of 16½ bushels. In Mandscheuri barley we have had an average yield in sixteen years of 69.8 bushels, and in Mensury of 58.7; a difference of eleven bushels. These two varieties illustrate the importance of getting the variety of seed best suited to your condition.

Having obtained the best variety, you must select the best seed from that variety, that is large, plump, well-matured seed. In oats we have had

at the College Farm, taking the average of a number of varieties, 62 bushels per acre from large, plump seed as against 46 bushels from small seed; in mangles 33.2 tons per acre as against 21.5; in rape, 17½ tons as compared with 12.4.

Next we come to the selection of the plants from which the seed is to be obtained. Experiments at the College show the practicability of growing the same variety for at least sixteen years on the same farm without changing the seed, and even of considerably increasing the yield, if careful attention is given to the selection of plants and the selection of the seed from those plants. In our experiments we have found that Mandscheuri barley, from large, plump seed, gave us 69½ bushels per acre, but that where the seed was selected with special reference to the character of the plant, we obtained 78½ bushels. Similarly in Siberian oats we obtained 68 bushels per acre from selected seed, and 91 1-3 bushels where selected seed was obtained from selected plants. Taking the average returns obtained from eight varieties of oats, we have in sixteen years increased the yield from 74 to 100 bushels per acre by careful selection. This has been done without introducing any fresh seed from outside.

It does not take long to secure a supply of selected seeds. A single Joannette oat planted in 1903 produced 1.2 ounces of grain. The product of this gave us 74 pounds in 1904, and in 1905 this 74 pounds of seed yielded 3,749 pounds, or over a ton and a half of grain. In this way we are securing improved strains which are giving better results than the original variety, and these we are now sending out to our experimenters.

There is still another step in this work, namely, cross-fertilizing from selected plants. Some of our standard varieties of grain have more or less important defects. In winter wheat, Dawson's Golden Chaff is rather soft in the grain, and somewhat subject to smut. If we can eliminate these defects by crossing with some other variety, the result will be an improved Golden Chaff. Working on this line, we have succeeded in securing a number of very promising crosses. By combining Mandscheuri and Two-rowed barley we have secured a plant that has the length of head of the Two-rowed while retaining the six-rowed characteristic of the Mandscheuri. In similar manner we have crossed Harrison's Bearded spring wheat with Red Fife wheat. Red Fife is long in the head and Harrison's Bearded is short, plump and bearded. The cross has about the same length of head as the Fife and the plumpness of the bearded, and at the same time it is beardless, while some of the grain produced is harder than Fife itself. We consider that these results are very encouraging, and that the outcome is likely to be a practical improvement of some of our varieties of grains, and to largely increase the yield of the grain crops of this Province.

CANADIAN SEED GROWERS' ASSOCIATION.

By DR. J. W. ROBERTSON, GENERAL MANAGER MACDONALD COLLEGE, STE.
ANNE DE BELLEVUE, QUEBEC.

I have listened with much pleasure to the outline Prof. Zavitz has given of the work that is being done at the College, and I wish to call attention to a few of the lines of usefulness of the Canadian Seed Growers' Association. First, it calls the attention of the ordinary farmer in a general way to the great advantages that will come to him from using selected seed. Most men

are apt to think that work of this kind is a little beyond them, and that it can be done only by institutions of the kind we have at Guelph. Therefore, the Association attempts to bring within the range of the ordinary man's ability the methods that have been found so useful at the College. Three things have become clear to the Association; first, that every farmer by selecting the best seed from the best heads in his crop, can annually improve the quality, and that this process may go on indefinitely. This has been proved in the case of sugar beets. The sugar content of which has been increased in the last hundred years at the rate of about one-eighth of one per cent. per year. The work of the Association has proved that similar results may be obtained by means of selection in grains.

Then the work of the Association has made it clear that the ordinary farmer will pay more for improved seed. No one can undertake to select seed grain and sell it at the same price as he sells grain for milling and feeding; therefore, it is essential that the farmers should be convinced that it is to their advantage to pay a higher price for selected seed than for ordinary seed, and the work of the Association is influencing the farmer to pay the additional price which such seed must bring if the men who are engaged in the work are to continue it. In other words, the Association is influencing the market demand, without which the work must come to a standstill or go back.

The Association is also doing the work of a primary school by helping every man to learn for himself by practice on his own farm what is best to be done. Every ambitious farmer should strive to do two things in his occupation. He should try to leave the live stock in his neighborhood better than he found it, either in connection with the breeding or feeding or the taking care of animals. Then in connection with grain, he should seek to so improve its character as to increase the average returns from grain grown in his section. It is the duty that each man owes to those who are to follow him because of the accumulated benefits of civilization which he has inherited. Perhaps in no other way can he be of greater benefit to his locality. If our farmers generally would keep these aims before them for ten years, we should get a clearer perception of principles, our feet would be on solid ground in regard to progress, and every man would be able to say that he was carrying forward the aims of civilization so far as was within his power, and agriculture would thus attain its true status.

CORN IMPROVEMENT.

BY L. H. NEWMAN, SEC. CANADIAN SEED GROWERS' ASSOCIATION, OTTAWA.

I have been asked to outline the work undertaken by our Association in this Province in connection with the improvement of the corn plant. It is unnecessary to refer to the great importance of this cereal in connection with the live stock industry. The object of our work is to obtain better corn and a greater amount of food value per acre. Our experiment stations have done a useful work in eliminating inferior varieties and improving new ones, but little has been done to improve the standard varieties. The system we follow is a simple and practicable one for every farmer to adopt.

The first essential in developing a pure strain of corn is to grow it in an isolated position so that it will not be cross-fertilized by the pollen from other varieties. This is a difficult thing in many cases, as it is claimed that a

distance of a quarter of a mile is necessary to prevent cross-fertilization taking place. Our plan is as follows: When the ground is properly prepared, it is marked out in rows, three and a half feet apart each way; a convenient sized plot is one of twenty rows with fifty hills in each. Each row is planted with corn from a separate ear because of the different productive capacity of the different ears. It is necessary to select ears from rows that show themselves capable of producing the larger yields. With this end in view the vitality of the grain on each ear should be carefully tested before planting. This is termed the germinating test. For this purpose six kernels are taken from different parts of each ear, the remaining kernels being left on the ear to await the result of the test. This test will determine which ear shall be kept for seed and which shall be discarded. After the corn is planted nothing remains to be done until it begins to tassel. Then, before any pollen is shed, each alternate row is detasselled. This operation prevents inbreeding (the fertilization of an ear of corn by the pollen of the same plant). At this time it is well to remove all barren stalks and suckers from the rows. By this system the detasselled rows are cross-pollinated by the adjoining ones. When we come to select the grain, the most productive of the detasselled rows are taken and a selection made from them. The old method was to go through the field at harvest time and select the best developed ears. That method was satisfactory so far as it went, but it did not go far enough, as you could not tell to what extent the grain produced was the result of cross fertilization. By the method I have described this difficulty is overcome. Having selected the best ears from the best plants in the crop for a number years, it is possible to secure a strain of corn which will produce considerably larger yields than the varieties produced originally.

We also aim to secure a strain that will grow the ears comparatively low down on the stalk, for if the ears are produced too high up, the danger to the crop from wind is very much increased. In the United States they have done much in this direction; they have lowered the position of the ears on **some strains to a marked degree** by selection from plants that were inclined to produce ears in that position, and they attach considerable importance to this point.

Q.—Can you eliminate barren stalks by this means?

MR. NEWMAN: In Illinois they have decreased the percentage of barren stalks from 60 per cent. to less than 12 per cent. in ten years. To show what can be accomplished by selection, I may say that in that State, by means of selection, extending over a period of more than half a century, Reid's Yellow Dent has been so improved as to produce one hundred bushels of shelled corn per acre. Some of this corn is now being grown by members of the Association in the southern parts of the Province. We hope to gradually develop a strain there suited to this Province for supplying seed for the growers of fodder corn at points farther north where the grain itself cannot be fully matured. One of the objects of the Association is to create reliable sources of supply of seed corn of the Dent variety so as not to leave growers **dependent on the southern grown seed.**

Q.—Is there any advantage in having only one ear on each stalk?

MR. KLINCK, Macdonald Agricultural College: In regard to the number of ears on the stalk, if you have one ear on each stalk averaging one pound in weight and have a full stand, an acre would produce about 150 bushels of shelled grain; but of course all will understand that it is not practicable to secure a full stand. There is really not much advantage in trying to develop more than one ear to the stalk. When there is only one ear, the

size and quality is better and less work is involved in husking. This applies more particularly to the heavy Dent varieties.

Q.—Do you prefer the hill system to drilling in the grain?

MR. NEWMAN: Yes, for breeding plots it will be found more satisfactory, and even in the general field crop it will give better results as a rule.

The speaker then introduced a half-bushel crate which Essex growers of seed corn are using for the shipment of grain on the cob, bought from them for seed purposes, the crate having open slat-work at the sides to admit of a free passage of air. The great advantage of buying seed corn in this way was pointed out, it being claimed that the vitality would be retained much more easily, and furthermore that purchasers could see exactly what they were buying.

REPORT ON EXHIBITS AT THE WINTER FAIR, GUELPH

SWINE.

YORKSHIRES: By WM. JONES, MOUNT ELGIN.

The exhibit of Yorkshires was good. Each section was filled with high class animals, and in no case was there to be seen on exhibition a really poor individual. The first call was for barrows under 9 and over 6 months; four animals of high character responded to the call. The first was placed on a pig of exceptional quality, and difficult it would be to beat him. He was an individual of the right type, being of good length of body, strong on legs and feet, and very active; nice smooth shoulders with nicely arched, firm and well fleshed back; and with well developed hams and in all not a particle of coarseness about him anywhere. The second and third prizes were placed on a pair of capital good ones, very much alike and of the same type as the first prize winner, but lacking a little in size and not carrying quite as smooth finish. The fourth prize was placed on the other entry from the same herd as the first prize winner, and, although a good animal was of less scale and scarcely as nice type as those placed higher in the awards.

Barrows under 6 months: This section brought out only three animals, all of different type and appearance. The first prize barrow was of the lengthy kind, smooth and nicely finished, a trifle soft in flesh and rather large for his class. The second prize animal was a smooth, nicely finished pig of medium size and almost too much flesh for his size, the third prize ribbon was placed on a pig of good conformation, but carrying too much fat for his class.

Sows over 9 months old and under 15: There were eleven entries in this class and not a poor one to be seen in the lot. First, on a capital sow of true Yorkshire character, standing on the best of legs and feet, large, lengthy and smooth throughout, and not carrying too much flesh. The 2nd, a sow of just as much quality as the 1st prize winner, but lacking a little in size in comparison, and yet not small by any means. The 3rd prize was placed on a good sow in every respect but not so strong on feet and legs as those placed higher in the awards. The 4th went to a sow of good type, good feet and legs, but carrying more flesh with a trifle thickness on back, which prevented

her from getting a better place in the awards. The 5th prize went to a sow much the same as the one placed 4th, and carrying too much fat. The 6th went to a sow of considerably less scale than those placed higher, but a sow of the right type, smooth and nicely fleshed. The remaining five in this class were all good sows, and assisted in making an excellent exhibit in this section.

Sows over 6 and under 9 months, brought out ten. The 1st and 2nd prizes went to a pair of sows very much alike and difficult to say which should be first. Both sows had great length, good legs and feet, nicely arched and well fleshed backs, and of good Yorkshire character throughout, and although large for the class, exhibited no coarseness whatever. The 3rd prize sow only lacked the size of being quite as good as those placed higher in the awards; a capital sow in every respect. The 4th prize sow, although a good one, lacked a trifle in constitution and character in comparison to those placed above her. The 5th place was awarded to a good useful sow, but lacking in type and not so well finished as those placed above her. The 6th prize went to a good lengthy sow of good type but lacking in her legs and feet, and not so strong on underline as pen companions that secured 1st and 2nd.

Sows under 6 months: Sixteen in this section. First prize was a very nice sow, well finished, good type and size, while the 2nd and 3rd, 4th and 5th places went to sows all considerably the same and all a very nice lot but not quite large enough to secure the 1st in this section; 6th went to a sow larger than any others competing in this section, but lacking in type and character.

Three pigs, offspring of one sow. This section brought out four lots. First prize pen comprised the first prize winner in section One; second prize winner in section Three, and the third prize winner in section Four; 2nd prize, a lot comprised of first and second prize sows in section four, and fifth prize sow in section three. The 3rd prize went to a lot comprised of first prize sow in section three, and second and third prize barrows in section one, making in all an excellent exhibit.

TAMWORTHS: By WM. JONES, MT. ELGIN.

The exhibit of Tamworths, while not so good as the Yorkshires either in point in numbers, or in the exhibit not being so uniform in type and character, yet, on the whole, was fair.

Barrows under 9 months, the first three places went to capital barrows; all good ones of the right type and nicely finished, while the 4th prize went to a pig of less scale and not so typical as those placed higher in the awards.

Barrows under 6 months. First in this section on a very nice pig, smooth finish, good length and well up on legs and feet. The 2nd was placed on a good strong pig, not long and not possessing very much Tamworth character: 3rd went to a very nice pig, small for class but very nicely finished. The 4th was placed on a good strong useful pig with plenty of bone, but showing too much coarseness for class: 5th prize went to a nice type of pig, but injured a little on hind quarters, causing lameness. The 6th went to a pig, small and short for his class.

Sows under 15 months came next, and brought out a very good class. First and 2nd went to two capital, up-to-date sows of immense scale and finish and true to type in every respect. The 3rd prize went to a strong useful sow of nice type, but not large enough to compete with those placed

Higher in the award. The 4th went to a sow of very much the same type as the winners of 1st and 2nd prizes, but not nearly so good on feet and legs.

Sows over 6 and under 9 months. First on a nice, smooth, lengthy sow of good character, and good throughout. The 2nd prize was captured by a sow of more weight but less length and of not so desirable a type; 3rd and 4th went to sows of same type but too short and thick for class.

Sows under 6 months. First prize on a good lengthy, useful sow of right type; 2nd and 3rd to sows of a little less scale, but of the right type; and 4th on a very good sow, a little on short order for class; 5th and 6th went to a pair of sows far too thick for the class.

PURE-BRED BACON HOGS: By WM. JONES, MT. ELGIN.

The exhibit of pure-bred bacon hogs in point of quality, easily exceeded all previous exhibits. No less than twenty-seven different groups were forward for inspection, and there was scarcely a poor one in the whole lot, and so close was the competition that very little difference could be found in many of the prize winning lots, after a careful examination of the different lots on exhibition.

The first prize was placed on a capital pair of pigs of medium size and excellent type, not a particle of coarseness about them anywhere and as nearly alike as possible, making a very strong pair, and one that was as nearly perfect as we may expect to find. The second prize was placed on a grand pair of pigs, not so perfect in size as the first prize winners, one pig being a trifle larger than the other: they were also a little large for their class. The 3rd prize was placed on a very nice pair of pigs of excellent type, but just a little unfinished. The 4th prize pair were a trifle better finished than the ones placed higher in the list of awards, but not so good a type, being much shorter in body with a little coarseness in the shoulder. The 5th prize went to a pair of well finished pigs, but not well enough mated to carry them higher up in the list. The 6th was placed on a pair of well finished pigs of good type, a little shorter than the previous winners in the class. The 7th went to a very good pair of pigs, but a trifle short, with a tendency to more shoulder than is necessary in a bacon hog. The 8th went to a pair of good finished pigs a little short and thick for a class composed of so many good ones. The 9th went to a very nice pair of pigs a little fat for class. This left outside the list of awards altogether a lot of very good ones that were a credit to the exhibitors, but that could not be placed owing to the exceptionally high class standard exhibited in this class.

GRADE BACON HOGS: By WM. JONES, MT. ELGIN.

The exhibit of grade bacon hogs was very good, although not so numerous as the pure-breds.

The first prize was a pair of Yorkshire and Tamworth cross. This was a grand pair of pigs, one possibly a little too good. The 2nd went to an exceedingly nice pair, but scarcely so long as the 1st prize pair. The 3rd went to a pair of high grade Yorkshires, a trifle plain in shoulder, but excellent in form and finish. The 4th went to a very good pair but lacking in length, and a trifle thick in comparison to those placed higher in the awards. The 5th and 6th went to two pairs of pigs that were mis-mated, there being a good one and one not nearly so good in each pair. Had the two good ones been paired together they would have taken a much higher place in the list of awards. The 7th and last position was awarded to a pair too thick for No. 1 bacon hogs.

POULTRY.

BY G. H. BURGOTT, LAWTONS, N.Y.

S. C. White Leghorns.—1st cock, a very easy winner in his class, white, typical and a grand bird; 2nd, also a very fine bird, good type, but not as good in head. The balance of the class were all birds of merit, following closely the 1st and 2nd prize winners. Hens: We find a grand bird in the first, a trifle pinched in tail, grand head (for a hen) and fine in color; the 2nd also a very fine hen, not quite so typical, and the balance right up close to these birds. Cockerels: A grand lot, the first a gem, really the only outstanding fault was the blade of his comb, a grand type bird, white and with the very best of coop manners; 2nd, was also a fine bird, not quite so typical, needed more coop training. The 3rd, 4th and 5th were all birds of high order. Pullets: Another grand class; 1st a gem in her class, very white and was in the best of condition.

S. C. Brown Leghorns.—Cocks: 1st, the only outstanding bird, in fairly good condition, and a good colored bird. The balance of the class fairly good. Cockerels: In this class we find some wonders, 1st, 2nd and 3rd have a strong family resemblance. The first a grand typed bird with the very best of color, as were the 2nd and 3rd; 4th and 5th are also fine birds and show their breeding. Hens: 1st and 2nd two exceptionally fine birds. The first only wins over the 2nd on account of condition. A week or so later these awards would be reversed. The balance of the class fairly good. Pullets: 4 good ones. The 1st, a grand colored bird, but is somewhat undeveloped, not letting her show for what she is really worth; 2nd, a fine bird, a trifle more shafty, is more fully developed. The 3rd would win over the 2nd a week or two hence, but is undeveloped, but will be better in color. The 4th is also a fine bird, but with a trifle more shafting than 1st and 3rd.

S. C. Black Leghorns.—The finest class I have ever had the pleasure of handling for the size, truly a wonder in cocks and cockerels, of grand type were all the winners, and when I say grand type in Black Leghorns, that means something, for you who breed Blacks know that type has been a hard fight. The females were also of a very high order, and in fact the winners were all representative birds.

R. C. White and Brown Leghorns. While these classes were small as compared to the S. C., they were made up of some very fine birds, not quite equal in type to the single comb varieties. The Whites were a little the stronger. Some very fine cocks and cockerels were shown in the winners.

BY J. E. BENNETT, TORONTO.

White Rocks.—About 130 entries. Cocks: The first was a grand bird all round, right through moult, full tail, grand shape and good comb and fine legs, wins well. Second, another big, fine bird, and as white as first but ragged in tail and not quite so good in comb. Third, a very fine bird, not so large as the others and looks narrow in breast and body compared with the other two, but was a good one all the same. Fourth and fifth, good but not in it with the others. There were some very fine birds left out as there were no more cards for this class. Hens: Thirty or over, so there were ten prizes. First was a very hard hen to find anything the matter with but legs, and she was very pale in legs, and I was quite a time deciding. There was a slight shade of yellow. She won everything else and I had either to give her the

first or put her out altogether, so gave her the benefit of the doubt. Second, a grand shape and color, tail not quite out yet. Third, another very fine hen, and as white as snow, but was not quite so large. Fourth, fifth and sixth, real good hens and fit to win almost anywhere. In fact, right up to the tenth there was not a hen but was good. Cockerels: Thirty-three. First, a very large bird, grand shape and very white, a little off in comb; in splendid show condition. Second, another very fine bird, not so large but good shape and color; ran first very close. Third, if a little older would give them a very close run. They were three very hard birds to beat. All were as white as snow. Fourth was a very large bird, but off in comb. Fifth and sixth, real good birds and not a shade of brass in any one of them. The others lost a little in color. There were ten or twelve good birds. Taking in the whole class, I think it was the best ever put up. Pullets: This was the hottest class of the lot in White Rocks. First, a regular beauty all over, as white as a lily, perfect comb, grand shape and in fine condition, wins well, and, I think, is the best White Rock in the show. Second, another very fine pullet, but seems a little droopy. Third and fourth, hard to pick from. Just as good in color but not quite so good in shape. Then there were ten or twelve good pullets and not one but was fit to show anywhere. As I said before, this was the best class in White Rocks.

Buff Rocks.—Not so large a class as last year. Cocks, fine: First, a very fair bird, nice buff in color, fair shape, too much comb and wattles. Second, loses in color to first and not so good in shade. Third, not much. Hens, only three: First, a very fair hen and an easy winner. The others might be a lot better. This class I thought very poor and would like to see a lot better. Cockerels, eight: First, a grand bird, a nice golden buff all over, good shape, fine legs, a little large in comb. Second, another very fine bird, look like brothers, ran first very close. These were the two best Buff Rock birds in the show. Third, quite a bit younger and not the color or shape the other two were. There was another very young bird that should make a good one later on. First pullet, like first cockerel, a very even color, nice shape, good legs. Second, another very nice pullet. Just as good in under color, but not quite so even in top color. Third, loses in under color, would like to see the Buff Rocks a larger class.

Barred Rocks.—This was where the tug of war came, and I think it was the largest and best lot ever at the Ontario, 187 birds in all. Cocks: First, a fine, large bird, good shape, good legs and comb. Now, as to his color, he was lighter than what I like, but was the cleanest bird of the lot, not one tint of smoke or brass in any part of him, and was the same from head to tail. Second, another grand, large bird, good shape and comb, in color a dark bird well barred and a nice blue, ran first close up. Third was a fine, large bird, was well barred outside and of good shape, but was not as clean as the other two. Fourth and fifth lacked the nice evenness of color and were off in under color. Sixth was not ready. Seventh, eighth and ninth were real good birds. Hens: This was another good class. First hen was an exceptionally good large hen, a nice bright blue, very even color, well barred and very hard to beat anywhere; wins with plenty to spare. Second, good in color, nice light blue, like first, but lost in shape and was not quite ready. Third, another fine, large hen, good shape, well barred, and to the skin, but there was not that nice light blue that the others had. Fourth was another large hen, good color, good shape, was more open in barring and did not end with black tip so nicely. Fifth, another fine hen, well barred, nice blue and good legs, but back was tinted with old feathers. Sixth, fine, clear beak,

good legs, nice color, but too open in barring. The rest were real good hens but had not that nice, clear color. Cockerels: Fifty in number, and, take the lot, the best ever at the Ontario. There were fifteen or sixteen that I call first-class birds, and if scored would go 90 and over. First cockerel was one of those you seldom see, he was grand in shape, fine in legs, good comb, in color a shade darker than I like, but was like first cock in that every bar was distinct and clear. Second was another "cracker." I liked his surface color better than that of the first, but he was not quite so nice in under color, nor so good in legs. Third, a fine, large bird, good comb, good legs and stands well, is well barred, very even from head to tail, is not quite so bright as the first and second, but is a real good bird, and right up. Fourth, another grand bird, fine wing and tail, but not quite so nice and even in back, but well barred in every section; ran third very close. Fifth, a good shape and grand legs, but was not so good in under color, but was a real fine bird. Seventh and eighth, not far behind sixth; ninth, a younger bird and not yet ready; had some of his chick feathers in yet. Tenth, another good bird, rather too dark. This was a very strong class. Pullets: This was another very strong class, and a long way ahead of last year,—over fifty in number. First, one of the nicest pullets I ever handled, she was very clean in color, a nice blue, every feather well barred and ending nice, grand in shape and good legs, splendid wings and tail, not quite out yet, but real good, won well. Second, another "cracker," a shade darker in color, but finer in barring and a nice blue, grand in shape. Third, about the same color as first, but more open in barring, and did not end so nicely, but a real good one. Fourth, a very good pullet, but not nearly up to the other three; she was well barred and a nice color, but back was not so clear and that also was the great fault with the rest. Fifth, another grand, large pullet, a little more open in barring and very blue, if it was not for the smut in back she was a good one, and if she clears out as a hen, will make a very hard one to beat. Seven, eight, nine and ten real good pullets.

The Dominiques should be the same as the Barred Rocks with the exception of the shape. Going over this class after having judged the Barred Rocks, I find that the Dominiques require a great deal of improvement.

BY R. OKE, LONDON.

I was pleased to note the majority of the classes assigned to me were a decided improvement over those of last year, more notably in Orpingtons. Buffs being more uniform in type throughout the classes. The additional class provided, separating the blacks and whites, brought out two excellent exhibits, each class having a larger exhibit in all sections than the A.O.V. class provided last year.

Light Brahmas.—A large class, but taken as a lot were not above the average for this show, a number of the old birds being short in feather, and show to a disadvantage at this time, whereas if shown say only one month later there would be a vast improvement in length of feather. My contention is this, is that the length and flow of feather brings out the true type of the individual specimen, be it Brahma, Cochin, Langshan or any other breed, and if this is not developed I am doing the individual bird an injustice by criticizing it, and it is my intention to give all such specimens the benefit of the doubt, as far as I possibly can, and only mention those that are ripe for inspection. Again, in going through a class we meet a percentage of exhibits that never were or never will be other than very ordinary. It is not in their make up, be it type, soundness of color, striping, pencilling or barring, and

yet they are matured in length of feather. I remember well a Cochin hen that was shown at the Ontario Show last December, and reported on at the time. She was sappy in color, and had too many angles. I saw the same hen shown at Boston Show five weeks later; her color was as pure as the dew from heaven, her angles had assumed curves, she actually looked like as if she had just fallen off a Christmas tree. I have felt ever since that I did that hen a rank injustice when she was not in good condition by reporting as I did. First light cock very sound in his black, well-spread tail, nice neck. Second, was larger, failed in soundness of color underneath. Third, good type and shape of back, but failed in soundness of color. First hen, good head, nice striped neck, sound wings, good spread of tail, well banded. Second, better length of back, but failed in soundness of color and spread of tail. First cockerel and pullet well matured, shown in good condition, good in neck color, nice length of back and nice tail markings. First dark cock, good head, sound black breast, nice striped hackle and saddle. Second, shows too much tipping on breast, good striped neck and saddle, a little on the small side. Third, close up to second. First hen, good size, nice shaped back and even pencilling. Third, failed a bit in color, short hackle, otherwise good. First cockerel, good size, rich in his black and top color. Second and third failed in color of breast and width of body. First pullet, one of the very best necks I ever saw, rich metallic black to the skin, with nice silvery white edging, even pencilling throughout, with good footings. Second, failed in color of neck, bit brown on top. Third, failed in pencilling at throat.

Buff Cochins.—First cockerel, typical shape, good head and footings, rich golden buff plumage throughout, all sections in perfect harmony, will take some beating anywhere. Second, another good one, excellent type, but a bit warmer in color. Third, light in color, nice type, failed in size. First hen, a wonder for shape, good furnishings underneath, nice level top color of about the right shade. Second, another big, shapely hen, not so level in her color. Third, failed in size and evenness of color. First cockerel, beautiful shape, abundance of feather, a trifle pale in top color, very even in all sections. Second and third very close up, not much to choose between them, a grand team. First pullet, capital color, cushion and footings. Second and third about the same type, abundance of feather, not quite so well finished. White Cochins, a small class of nice quality. Black a trifle more numerous. First and second cockerels, to my thinking, the best in the class; nice hen sheen of plumage, could stand a little more length of feather.

Black Langshans.—A fine class, all three winning cocks were shown in nice fit, nice sheen of plumage, well up on legs, not much between them, first having a little the best of it in size. First hen, capital size and shape, rich plumage, well up. Second and third, hard to find fault with also. First cockerel, big upstanding bird, good type, in faultless condition. Second, good type, failed only a little on color. Third, failed some in size, otherwise good. First and second pullets, not much between them, capital color, well up on their limbs, very fit. White Langshans, quite an improvement in quality and numbers over last year; nice Langshan type, and pure in color.

Buff Orpingtons.—First cock, neat comb and head, nice type, being well proportioned throughout, nice even color, about the right shade. Second fails a bit in lobes and neck, tolerably even on top, and a good one. Third, a bit coarse, failed somewhat in color of neck and tail, pretty good even top color. First hen, grand size and type, might be a little more orange in color, but very even. When I judged this hen on Tuesday she wore a very passible lobe of a bluish red tinge. I remarked to my clerk at the time that it was

rather an unusual color; later on in the week I noticed they had faded considerably; she was not like the fellow that wore "the smile that would not come off." Second failed a little in type and evenness of color on surface. Third, of same color, only more prominent. First cockerel, a trifle high off the ground, good, sound color throughout, excepting sickle feather being clouded with black; he is a nice type and a good one. Second, failed a bit on lobes and undercolor of neck, a bit gone on tail, good fair type. Third, failed in neck, tail and legs, nice type, very good top color. First pullet, about the right type, nice even color and easily the best in the class. Second and third very fair type, but uneven color on top. It was unfortunate that the Buff class was allotted about the worst light in the hall. This may have been caused by the ancient wooden coops in which they were penned, but it certainly made it a difficult task to satisfy even one's self. Blacks were certainly a nice class throughout, being of nice type, and good length of feather and rich sheen of plumage. Some otherwise fine specimens fell by the wayside with side sprigs and stubbs. The blacks certainly have the buffs beaten in length and looseness of feather. Whites were also a big improvement over the quality shown here last year, white in lobes being the most prominent fault found in this class. Taken all together, the Orpington class, of all the shows I have seen, was second only to the Madison Square Garden exhibit last January.

By S. BUTTERFIELD, WINDSOR.

White Wyandottes.—235 birds in 1905, 129 in 1904. Cocks, 42 in number: First cock, a pearly white bird, with a grand Wyandotte back and well furnished cushion, and if all tail feathers had been at their full length would certainly have looked still finer. Second, a beautiful white shapely bird, grand comb and eye, grand colored legs, feet and beak, and about the only place I would wish to have him better would be a little fuller in cushion. Third, a grand, large white plumage bird, good comb and eye, and good colored legs and beak. His faults were, a little too long on shanks, and he carried his tail too low to set off his good back and cushion. Fourth, a pure white bird, grand, shapely fellow, but tail not full grown; his worst fault with his legs not being quite so yellow as those placed ahead of him. Fifth, a really grand bird, but not so white in quills as those placed ahead of him. Sixth, seventh, eighth, ninth and tenth all really first-class birds and would almost expect them to win at any other show, except in a class of 42 cocks. Probably it would be best to just quote the Standard; it will help better to explain my reasons for placing awards, for a judge must consider the shape and type, as well as the color, and to try and be just in making the awards requires a great amount of experience and knowledge to arrive at decisions. So long as our Standard description is followed, it often makes an exhibitor say he has not been justly treated, for he cannot see how the judge awarded the prizes as he did, and he, as usual, looks around for some other unsuccessful breeder, and rends the air with what he knows, and what the judge does not know. Now, here is the new Standard color description for white Wyandottes, male and female: "Plumage, color pure white, quills and shafts included." Hens, 51 in number: First hen, very white in plumage, grand in shape, grand in beak and leg color, and just about ideal in shape and make-up. Second, another white hen, good yellow legs and beak; about her only fault was a little pinched round the tail. Third, another good hen, not so white in quills and shafts. Fourth, another good hen, not quite so good in beak and legs as the three preceding. Fifth, another good hen, lacks a little more in shape than fourth. Sixth hen, too

long in body and back, and cushion too pronounced. We may just here give the wording of Standard: "Back—Short, broad, flat at the shoulders, rising in a concave sweep to a broad, slightly rounded cushion, which extends to tail coverts: plumage abundant." Now a great many of both males and females lacked in this one particular, and I would like to see where there is a large exhibit, as in the case of the white Wyandottes, some method devised that the winning birds could be moved after awards are made, and placed in their relative positions, going from first to tenth award. Very few men can carry a class of birds like that from one aisle to another in his eye. To select the winning birds in such a class was no easy matter, and there were so many good ones that probably not even I myself, after ribbons were all placed, could have re-judged and placed every bird in the same position, and should any other judge have had the task, there is no doubt in my mind it might have been different; and still the awards might have been very correct, for no two judges can select the winners out of such a great class of good birds as was competing. Out of the fifty-one hens competing, I may say there were easily twenty as good as first hen two years ago. Cockerels, sixty-eight in number, and there were twenty birds quite equal to first cockerel of two years ago. First cockerel, just an easy winner. As I was going over the cockerels I passed over probably fifty, taking a great many out of their coops to examine their quills and under-color, until I came to this first bird. He was a pearly white with only one fault, lacked about two weeks more development, just about the most perfect back and cushion, with saddle feathers glossy and shining like brilliants, pure white quills and shafts. Second, a rather nice bird, seeming to have quite a long tail, but if his main tail feathers had grown out to their proper length he certainly would have looked better for it. Third, another good bird, grand in shape, and quite a nice poser, and very white in quills and shafts. I noticed a great many showy, shapely cockerels, and prizes would have changed considerably if it had not been for hidden defects: before a breeder or a critic should venture to say much he should have had the birds in his hands: for so long as we have the Standard to judge by, though we may not fully coincide with it, there is no law that will warrant any judge ignoring any one section, and the Standard calls for plumage "pure white, quills and shafts included." Pullets, seventy-four. First pullet a peach, almost better in shape than our ideal on white Wyandotte female. Second, another grand Wyandotte, especially fine in color. Third, another stylish Wyandotte. Fourth and fifth, white, grand all over, except cushion not being full enough in width, and a little too ripe for this exhibition. Would have shown to better advantage about three weeks or a month ago. I think the pullet class was splendid, both in quantity and quality, and so nearly together in quality that those who won could go home and say, "Well, I was lucky," for anyone could truthfully say, "I saw lots of others I thought just as good as my own." But the vain critic would, even after he had looked them over, still insist in his own mind he ought to have won, because "I am one of the old exhibitors, and those new exhibitors, what do they know, anyhow?"

Black Red Games.—First cock, a very reachy bird, very straight on legs, good head, good colored neck and saddle, and quite rich in breast and tail color, but feathers on neck hackle and saddle hackle not as fine in texture as second, but the fine show condition helped him to beat second: but to my mind second, in same condition, would beat him, for he is much narrower in tail feathering, and shorter and harder feathered in body and breast, as well as in wing flights and secondaries. Third, I took a great many looks at. I thought I had seen him before. I liked his saddle and hackle feathers

so well that it made me feel sure in my mind I had passed over that bird before. He was a really good bird, but not so large in size, and needed quite a lot of good hard work to get him in the show condition of first and second. The other two cocks competing belonged to where we were at about ten years ago; soft in feather, though nice hackle color and saddle color, but the feathers too loose and soft, and same can be said of width in feather in main tail and coverts. First and second hens in one coop. I just looked over the other three and I said to my clerk, put first and second on those two. Well, I think I can almost say that those two hens were the best two hens I ever saw in one coop, and if they had been in separate coops I think I would hardly have known which to place first, for carriage of body and general carriage of neck, legs and tails, I think they were just about ideal. While it is generally admitted that a great many of the best cuts are overdrawn, being too long on legs and neck and giving the appearance of trying to reach meat from the hand of their owners, from the top of a 30-inch coop, that is not the natural position for those birds to stand in. They should carry their bodies at an angle of 45 degrees. Both these two hens were very short in feather, and very hard also in feather, with very narrow tail feathers, a thing very desirable to breed cockerels from: in fact, it is an impossibility to breed the fine-tailed cockerels from broad and loose-feathered females with broad main tail feathers. Third hen, fairly good, lacked finishing touches compared with the first and second. Fourth and fifth, fairly good, but not in the same rank of high-class birds. First cockerel, a grand, strong-muscled bird, and a real good all-round bird: hardly a place you wish to have better. Second, lacked a little in breast development, otherwise a good bird: very nice lemon neck and saddle. Third, a bird just about ideal in carriage and holding himself closed up so tight that the feathers looked glued down: he was not as good in color, and another fault he was not sound or strong on his legs. The cockerel I should have placed fourth was a very good standing bird, and large and well grown, looked like quite an early bird. I classed him in amongst the unplaced cockerels in the cock class: about ten years behind the day in our black red males. The other three cockerels, hardly as large, but much the same as the bird I should have placed fourth, had there been a fourth place. First pullet, a perfect gem, both in color, carriage and style, and if she had been a little larger in size, I never expect to see one much better. Second, a real good pullet. Third, too soft and broad in feather. The other three too soft and too coarse in feather. A few words more about the first and second black red hens: their neck hackles were so short that they looked as if they had been cut by scissors. I should say the feathers in the middle of the neck hackle were not over one inch long: while on our black red Game hens, six or eight years ago, they would easily be two inches long. Well, such hens as those two hens are the producers of such cockerels and pullets as won at our "Ontario" Show.

Brown Red Games.—One cock in this class I noticed was not showing himself to much advantage, but his color on breast and wing would charm any Brown Red breeder. Then the grand gypsy face; this should never be lost sight of in breeding, for it seems to me that both lacing on breast and grand wing color leave with the gypsy face. First hen, a gem in body and back color. Second, grand in body and breast color, but too deep yellow in neck hackle. Third hen, nicer neck hackle, but lacked in body and breast color. I noticed two very promising cockerels, but too young for inexperienced breeders to admire, and same I noticed in pullets.

Pyles.—A good show. First cock, quite a good bird in a good many ways, a little too long in back and body, and a little off in breast color, but

will take a mighty good bird to beat him. Second cock I liked very much; his greatest fault was his size. Third, a very good bird, and I may say the same of three others. First hen, quite a peach in shape, color and carriage, an easy winner. Second and third, both good, short, hard-feathered hens. Balance of hens, fair. First cockerel, an easy winner, well grown, well developed, and looked like making the winner for the Ontario next year. Second, a nice cockerel, and a very promising bird. Third, wider and looser in feather, and not so well cut away in stern. In any other variety Games I noticed some really good Birchens, and a high-class Birchen Game is just about as handsome as any other standard Game.

Bantams, Black Red Game.—Cocks, 12: First, one of the most showy males I ever saw, always in position, wings tucked tight to his body, and his neck, legs and whole make-up like the best cuts we see. Second, almost the same wording applies, only he is not quite as reachy. Third, an extra good bird. Fourth, a good bird all over, excepting, carries his tail a little too high, and coverts and sickles not developed enough. About four more birds worthy of special mention. Hens, 13: First, much the same as first cock, always in position, and the very finest of tails, short, hard feathers, and feathers very narrow. Second hen runs her pretty close; about the only difference in shape was that she was a little longer in the back. Third hen, another good one. Fourth, another good one, and five more all good ones, and hardly anything behind the fourth. Cockerels, 13: The first one took me quite a while to make up my mind about, for I was so much struck with the one I placed second. I gave the bird I placed first his position for his most perfect feathered tail; his coverts and sickles were just about the width of a straw, and a rich, shiny green, while the second I called as good or better, but he lacked the coverts and fine sickles; of course, if I had placed the first second and the second first, it would not have been far amiss either way. Third and fourth, just about a toss up, so nearly together; in fact the whole four cockerels were birds of great merit, and about four more of them almost good enough to win anywhere. Condition or out of condition would make some great changes in that class. Pullets, 15: First, a nice, small, reachy pullet, short in back, and carried the best of tails, very long in neck, and clean, well-developed shoulders. Second, another good one; in fact I may say about eight out of the fifteen were just about as good as ever met at our Ontario, and I can say this from my own knowledge, that no show on this side of the Atlantic begins to put up such a class, as large or as good in quality, and few, very few, on the other side of the Atlantic. I am not saying this to flatter the breeders, but I am saying it because I fear I am not able to give the exhibitors at the Ontario praise such as they deserve.

Brown Reds.—First cock, a very good bird, both in color and style. Second and third, only fair. First hen, rather a nice, shapely hen, but deficient in color. The other two, pretty good hens, but not so fine and small as the hens in black red class. Cockerels, 9: First an easy walk-over, racy and very stylish, with a grand gypsy face. Second and third larger, and not so racy or narrow in feather. I noticed two cockerels in poor condition; would have stood a chance to get into the money, had they not been so unfit for such company. Pullets, 11: In this class I awarded the first, second and third, and shortly after an exhibitor drew my attention to a pullet I had overlooked, and I said, "It is an oversight, and I will change it," and so I did, and felt satisfied and glad my attention was drawn to it. Pullet class of brown reds the largest class I think I ever met, and the most good ones in that class I ever saw.

Duckwings. Eight cocks, four good ones. First cock, I believe, was first cock last year, the bird I spoke so highly of; everything about him is almost what one could wish; color, carriage, and behaviour, marvellous. Second, I almost liked better in two or three things; a little smaller in size, but slightly ticked on breast. Third, a grand colored but not a showy fellow like first and second, but a good bird if he had a little more get up about him. Fourth, a very good bird. Hens, 8: First, second, and third, not much to choose from; all high-class hens and awards in a great measure were made on carriage and fineness and hardness of feather. Cockerels, 11: In this class the second, to my idea, was a model Game Bantam. I went and looked at him probably a dozen times after awards were made, and he was always standing ideal, with one of the grandest tails I ever saw on a Game Bantam, but as he was neither silver nor golden in color, I could not place him first. First cockerel, a good golden Duckwing in color, and about his only faults were, not long enough in neck, and did not carry his wings tightly closed. One might not have noticed it so much had it not been for the second, with the very best of tail and wing carriage. Third, a grand bird in every particular, excepting wing shoulders being indistinct in color. Pullets, 11: A really grand show of pullets, and the three winners all hard and close in feather and very little difference; prizes went to the birds with the best carriage and length of leg and neck.

Pyles.—Cocks, 11: First, a grand bodied bird, very close and short, and hard in feather, about his only fault a little too high in color. Second, a grand small bird, better in color than first, but did not carry his wings so tightly folded. Third, another grand bird, and about the only fault he had was too much ticked on breast, and not quite so reachy as first. There were three more cocks in this class, very fine specimens. Hens, 13: First hen, not so perfect in color as we would wish, but the narrowness and hardness of feather, along with the way she carried herself, won for her. I gave her the preference, not without spending a little time in determining between the second hen: about her only fault was too much color to suit Standard description, and had the prize been placed *vice versa* no exhibitor would have had any cause to complain. Third, another grand hen, and so was the fourth; in fact, I think the Pyle Bantam class of cocks and hens was about the best class of Pyles I ever met. First and second cockerels, very close, and prizes went to the hardest and narrowest feathered bird, all other things being pretty equal. Third, not in good show condition, but may make a good bird when seen next season: balance of class just fair. First pullet, a good deal like first hen, very short and hard in feather, her only fault being her colors not being so distinct. Second, a long-legged, reachy pullet, hard as nails in feather, but too much mixed in color. Third, probably a long way the best pullet in color, legs not so long nor as straight as the two preceding her, a nice pullet but too soft and broad in feather. Fourth, another grand pullet but her greatest faults were softness and broadness of feather. This Pyle class was a good show of itself. A. O. V. class was a very good class, but they lack hardness of feather to make them really A1 birds.

White Game.—Cocks, 3: Three pretty good cocks, no one with much advantage over the other. Hens, 3: Just about the same as the cocks, not one standing right out as an easy winner. Cockerels, 6: First cockerel, best male in the white class, very short in back and small in body, and looks like making one of the best cockerels yet produced. Second cockerel, larger and looser, and longer in feather. Third, very close; balance of class only fair. Pullets: First pullet, small in body and very narrow and hard in

feather. Second and third, rather nice stationed, nice carriage, but very soft and broad in feather.

BY L. G. JARVIS, MONTREAL.

Dorkings, Silver Grey.—A nice lot, with but one or two exceptions all in best of condition. I was pleased to note that in all varieties nearly all specimens had shapely combs, not over large and coarse, as in former years, but combs that would conform with the size of the specimen, and in males the very fine striping in hackle so desirable was very noticeable in all the prize birds. In females, first, second and third hens, and first and second pullets were very free from "bricky" wings, with rich colored breasts, deep bodies; in fact, all Dorkings in type. Colored, not so large an exhibit as I have seen at this show, but some very fine birds, particularly first cock, and first and second hen. White, first and second cocks, good shape, neat combs, good bone. Third, not as good in breast shape, coarse in comb. The same may be said of the hens. Chicks: First cockerel a good one. Second, fair, not so deep in body, tail a little upright. Pullets only fair.

Polish.—W. C. Black a nice lot. First and second cock very close, first winning in shape and size of crest, and was a little deeper in lustre of plumage, although showing a little purple. Third, nice color, not as good in crest or lobes. First hen, an extra fine one, with a very shapely crest and extra fine in color of plumage of body. Second, not so good in crest. First cockerel, grand in color of plumage, fair in crest, beats second in color. First pullet wins easily, both in size of crest and color. Second and third, good ones. Golden, plain; some extra good ones, nice in color, and with fine lacing; the same can be said of the golden bearded and silvers, a very fine class all through, grand crests on nearly all specimens shown, and great size. Buff-laced, a neat class. First and second cocks close, first winning, by a small margin, in lacing. First and second hens, a nice mellow buff, first winning in shape of crest. Chicks fair. Certainly the Polish class, in every variety, was far ahead of last year in quality.

Water Fowl.—I don't think we ever had such a grand display of geese and ducks at the Ontario Show.

Geese.—Embsden, a grand lot, both in old and young; great size and all in fine condition. Toulouse.—A fine display; contest keen in both old and young. China.—Several fine specimens shown, both in colored and white. Now what this good old variety is again becoming popular, I would like to see prizes given for both colors. A. O. V. composed chiefly of Africans, a nice entry and some grand birds shown.

Ducks.—Cayugas.—First and second drakes, old, grand in plumage, good size, shapely bills and proper color, first winning chiefly on size. First and second ducks very close, first winning in color. Indian Runner.—The finest display ever brought together in this country. First drake wins in color, being a nice fawn, where that color was required. Second, good size, but slightly off in color. First duck wins in color over second. Young drakes extra good. First and second close, first winning in shape and color of bill. First female, not as good in color of wing as second, but better in top color. Aylesbury.—Hardly as good as we have met at this show, on the whole; yet the first drake, old, and the first duck all Aylesbury in shape, and in fine condition. First duck, young, hard to beat, grand bill, both in shape and color, and hard to find fault with body in shape. Pekins.—As usual at this exhibition, a grand display, winners enormous size, and all

Pekin in shape, more particularly first and second drakes and first and second ducks, both in old and young classes. Rouens.—A nice lot. First drake, nice bill, rich in color of breast, with extra fine shape. Second crowding close for first, only beaten in color of body plumage. First and second ducks close, first better in shape and color of bill, second better in pencilling on back. First drake, young, nice shaped body, great length of bill. Second not as large, but rich in color of plumage. First and second ducks, young, very close, first winning in pencilling on breast. Muscovies.—Colored and white competed. First drake and first duck, colored, extra fine, large and rich in plumage. Second, white, fair, not as large as the first. Ornamental.—Mandarin and Wood Duck shown, two beautiful pairs on exhibition, the finest in color of plumage that I have been privileged to see in many years.

BY T. H. SMELT, WOODSTOCK.

The class for Silkies was very good, and competition keen. The first cock is a real good one, correct shape, good color, fine in legs and toes, and texture of plumage extra good. Second, good in texture of plumage, lacked some in color of face and comb. Third, considerably coarser in plumage. First and second hens very fine, first a little whiter in plumage than second. Cockerels and pullets not quite so good as old class, showing coarser texture of plumage.

The class for A. O. V. brought out a number of good ones. First cock, a silver pencilled Wyandotte, good shape, nice head and good color. Second, a Frizzle of good quality. Third, a silver pencilled Wyandotte, rather poor in color. In hens, the same varieties were all of good quality. First cockerel, a Rhode Island Red, a good one, typical in shape, neck and back color very even, good breast color and also good head points, a little too dark in wings, and off in tail color. Second, a Rose Comb Rhode Island Red, of nice color and close to first. Third, a good one, rather lighter in shade. Pullets.—First pullet, a real nice one of the right shade of color, and fine in shape. Second and third close up, but lack in color to first.

Sultans.—First cock, a little off in color, but extra fine in crest and beard, and well feathered legs. Second, a nice one. First hen, grand crest and beard, and well feathered legs, a little defective in beak, also a little off in color. Second, a real good one, not in as good trim as first. Chicks in both sections were first-class, and little choice for honors.

Red Caps.—First cock, good head, well shaped breast, good in back shape and fine rich color. Second, a good one, not so good in head as first, lacks in shape of breast, not so typical in shape. Third, good in color, plenty of bone, but off in breast shape. First hen, splendid shape, nice even color, well shaped, good head. Second hen, good rich color, good head, a little off in back shape. Third, rather light in bone, color not so clear. Cockerel.—First, good type for color, not good comb, but good breast shape. Second, lacks in shape, but better comb, not so good color. Third, a fine bird all over. First pullet, a nice even color, good head and typical in shape. Second, further matured, but lacks in color and shape. Third, a good colored one, but not so good in shape.

Houdans.—First cock is a grand one, very little fault to find in him. Second, a fine rich color and good shape, very stylish, perhaps a little narrow in body. Third is a good one, as were also several others in the class. First hen is perhaps the best one ever shown at the Winter Fair; she is typical in shape, nice even color, fine crest and heal, wins easily. Second, a

first-class bird, lacks in shape and color to first. Third, lighter in color, but a real good Houdan. A lot of nice ones left out. First cockerel, a grand one, almost perfect in color, fine shape, good legs and feet. Second, lacks in color, not so typical. Third, a very good one but off in color. First pullet, a real good one, fine shape, good color, well shaped crest and beard. Second, good shape and good color, but a little off in toes. Third, also a good one, lacks in color.

Golden Spangled Hamburgs.—First cock is a good one, rich color, nice head and lobes, well spangled breast; second, a nice one, not in as good trim. First hen is a gem, fine rich spangling, a hard one to beat anywhere; second also a good one. First cockerel, a grand one in color, extra fine head and lobe; second, close up to first; third, a good one, lacks a little in richness of color. First pullet, the best we have seen for a long time, fine in spangling and very stylish; second, nice one, not so well matured; third, also a good one.

Silver Spangled.—First cock, good head and lobes, extra fine tail, and well spangled; second, not so good in tail; third, off in lobes, comb not so good. First hen, an extra good one, good size, very bright in color of spangles. Second close up. Third, a good one, lacked a little in style. First cockerel, a very stylish one, good spangling, fine tail; second, good head and lobes, a good stylish bird; third, not quite so stylish and lacked in neck color. First pullet is one of the best ever shown here, nice shape, well formed spangling and a hard one to beat; second and third are also good ones.

Golden Pencilled.—First cock, grand type, rich color and fine tail. Second, not so rich in color, lacked a little in lobes. Hens are all extra good, little choice for honors. First cockerel is good enough for any company; second lacked a little in richness of color to first; third, a nice one, not in so good fit. Pullets, all good, little choice.

Silver Pencilled.—First cock, very typical, grand color, good tail markings; second, close up, lacked in color of tail to first. Hens are all first class, little choice. First cockerel, grand head and lobes, extra fine tail and very stylish; second not quite as good in lobes and tail. First pullet, a little brighter in pencilling than second, lobe first class.

Black Hamburgs.—First cock is a gem and hard to find a fault in him; second is first class, lacked a little in comb. First, second and third hens are the grandest lot ever shown here. First cockerel, the best I have seen in this country; he is very near perfection; second and third are extra good also, both grand in color. Pullets, first and second, little choice; third lacked in shape, not so stylish.

Andalusians.—First cock, grand shape, good head, very stylish, a little off in color of breast; second, good type, rather uneven in color, a little off in shape of breast; third, a good one, ear lobes off color. First hen, a good evenly laced one, good shape; second, not quite so even in lacing; third, rather dull in color. First cockerel, a gem, typical shape, good color, fine head, good breast, an easy win; second, not so fine in head and hardly as good tail, but a good one; third, a good one, lacked in color, not so well developed. Pullets were an extra good lot, competition very keen; a lot of good ones left out.

Spanish.—First cock, the best ever shown at the Winter Fair, a big fellow, true Spanish type, good comb and splendid color; second, rather poor comb, but good in other sections; third, rough in face, not a good color. First hen, a very typical one, nice face, good color, well shaped back; second, not so smooth in face but a good one; third, shorter in face, also

good. Quite a number of good ones left out. First cockerel, a fine shape, good color, splendid smooth face, wins easily; second, not so good color but a good type, nice head and face; third, not so well developed, shorter in face but nice comb, others good. First pullet is a typical Spanish, well grown, fine face and grand color, won easily; second, fine shape, good color and stylish, a little shorter in face; third, not so good in shape and color, a little rough in face. Several others left out that were really good.

By J. H. DREVENSTEDT, JOHNSTOWN, N. Y.

Of the classes the writer of these notes handled at Guelph, all except one were of surpassing excellence. The exception was Black Sumatras. For some reason this fine breed has been allowed to fall by the wayside. Although there were several very good individual specimens, the majority were not of the correct type of Sumatras, not having pea-comb, nor showing the length of body and tail and greenish color so inseparable in a real fine Sumatra. Face and head points were also below the accepted Standard.

The *Buff Wyandotte* classes were exceedingly fine. First cock, fine in shape, if not in best of feather, a rich even buff in color all over, clean wing and tail, good head and comb. The second was not far behind, being nice in shape and color, lacking only in tail which showed a little black, and neck, which was light in under-color. Third, was another fine bird in shape and of good color, carrying a rather larger comb and being somewhat too light in color of back and breast. Hens were fine. First a blocky type of Wyandotte, rich in color all over; second, close up, but not so good in color of tail; third, though a nice even-colored bird, was handicapped by comb being too large. Cockerels were a grand bunch. First was a beautiful golden buff with fine head and comb, absolutely pure buff tail, primaries and secondaries large in size, neck feathers not full grown and tail not fully out, otherwise good in shape, should develop into a grand cock bird; second was a perfect little beauty in shape, with good comb and head, very even color in surface, though a trifle off in tail color, had this bird the size and weight he would take a lot of beating. Third was fine in color with a little black in tail, but fails in shape, being too high in legs and long in head. First pullet was very even in surface, a fine shade of buff, pure buff tail and primaries, good head, comb and shape; second, was another beauty in color, very even except main tail feathers, which showed a trifle smoky, fine in shape, good head and comb; third was even in color, but a trifle too dark; fourth and fifth were both good ones, the latter especially so in color, but failed in size. It was a grand class.

There were eighty *Black Minorcas* and some of the finest we ever handled, and we doubt if a larger or better class was ever penned. First cock was a wonder in size and shape and good in color, the comb large but well serrated; second was fine in color and excellent in comb, but not so large or good in shape as winner; third was fine in shape, of fair color, with good comb and lobes. First hen was grand in shape and size, fine color in comb and lobes; second was very close, having rather rough lobes; third lost in color and comb; fourth was fine in shape, good in comb and lobes, but failed in colors. Cockerels were a grand bunch of twenty-three, first being a beauty in style and shape, great in size, very good color, with splendid comb and lobes. Second was fine in color with good comb and lobes, but not quite so good in shape and size; third was fine in shape, of very good color, comb and lobes too large; fourth had good lobes, head, and comb and color, and was nicely shaped with exception of being too high on legs. The first, second and third pullets were like sisters, beautiful in type, fine in color,

comb and lobes, with grand size. There were numbers of others in the lot that could win at the best of shows.

Columbian Wyandottes were fairly good, the first pullet being the star of the class, a real top-notch in color and shape. Partridge Wyandottes had small but good classes. First hen was a beauty in color, pencilling and shape. We particularly fancied the first cockerel, fine stylish bird, with beautiful colored hackle and saddle.

Black Wyandottes made but a small class, but were very good in quality. Javas were not numerous, but were good in Blacks and very fair in the mottled variety.

Silver Wyandottes were both numerous and good. First cock was large, good in shape, very silvery neck, well striped, excellent saddle, fine wing bar, open-laced breast; second was similar but not so even in breast lacing, or as good in wing bar; third was a stylish bird, with heavier lacing, good wings, but not so good in hackle. First hen had very even open lacing, good shape, head and comb, but failed in color of the hackle; second was fine in shape and well laced, except in breast; in the third the lacing was good except in throat, and penciled in tail converts, good in shape. First cockerel had open laced breast and thighs, wing bar fine, good neck, fair back, head and comb good, fair shape; second was similar but darker in lacing and not so clean in wings; third, smaller, but very promising, being of the open-laced type and good shape. First pullet showed lacing of breast wing bow and back to be open, edge clear black, nice shape, good head, comb and neck failed only in lacing of breast near throat; second was strong in color of lacing of breast and wings, centres in back not being absolutely clear: shape, except too long a back good; third was open laced, good in shape: but has some edging or frosting in breast.

Golden Wyandottes had fine classes. First cock was good in shape and style, but comb was rather large, beautiful hackle and saddle color, good wings, lacking in upper breast lacing only; second had good shape and comb, well laced breast, good wing, not so good in neck and back; third had heavy coarse comb, good hackle, saddle and breast, too dark in wing bow, and lost in shape of breast and back. First hen was a grand old open laced bird, fine in color, good shape and had but one fault,—too large a comb; second was another good one in color, failing in breast lacing only; third, good in shape and open laced, lacks in ground color and lacing of breast. First cockerel was good in shape and comb, hackle saddle was even in color and good wings; second was not so good in comb and a trifle darker in color of back and wings, had good, open-laced breast and splendid wing bar; third, a smaller bird, carries tail too high, comb is uneven, but very fine in color of hackle and saddle. First pullet was a star, a real golden, open-laced, the black being even and of an intense greenish lustre, beautiful hackle, good comb and shape; second was another fine one in open lacing, the back being especially fine and even, but not so good in hackle and comb as winner; third was a nice bird in color and shape, with showy and intense lacing, but not as even as in other two.

Indian Games had showy classes, the stars being; first cock, a grand fellow in size, immense in bone, well-spread thighs, good color and fine shape. First cockerel was another excellent specimen in type and color. Hens, especially first, were very fine in type and good in color. Pullets brought out good ones in first, second and third, but cockerels were not as strong as we expected, most of the birds being too leggy, although good in color. Any other variety, brought out some very good Birchenes and a few Malays.

ANNUAL MEETING PROVINCIAL WINTER FAIR.

The annual meeting of the Ontario Provincial Winter Fair was held in the Palmer House, Toronto, on February 9th, 1906, at 3 p.m. The President, Mr. Arthur Johnston, occupied the chair.

The minutes of the last meeting were taken as read, and were adopted. The annual report and financial statement were read by the Secretary, and on motion of Wm. JONES, seconded by J. T. GIBSON, were adopted.

Moved by Lt.-Col. R. McEWEN, seconded by Wm. McNEIL, "That the revision of the Winter Fair Rules be left to the Executive." Carried.

Moved by A. W. SMITH, seconded by J. T. GIBSON, "That the recommendation of the Sheep Breeders' Association regarding long wool and short wool grade sheep and championship prizes be referred to the Winter Fair Executive, with a request that the recommendation be adopted, provided that satisfactory arrangements can be made for the additional prize money." Carried.

Moved by JAS. BOWMAN, seconded by J. JACKSON, "That the matter of making separate classes for Aberdeen-Angus and Hereford cattle be left to the Executive." Carried.

Moved by Lt.-Col. MCGILLIVRAY, seconded by J. T. GIBSON, "That we cannot entertain the request for separate sections for heifer calves." Carried.

Lieut.-Col. McEWEN requested that the Executive consider the advisability of adding a section for three wethers in the Hampshire and Suffolk class.

Letters were received and read from Mr. J. McKee, regarding the accommodations and prize list for dairy cows, and from Mr. G. W. Anderson suggesting improvements in the lecture room. The letters were referred to the Executive for full consideration.

Moved by Lieut.-Col. MCGILLIVRAY, seconded by J. JACKSON, "That a deputation wait upon the Hon. Mr. Fisher, with a request for additional financial assistance from the Dominion Government, the deputation to be representatives from the Cattle, Sheep and Swine Associations on the Record Board. Also that a deputation wait upon the Hon. Mr. Monteith to ask that the Ontario Government grant to the Winter Fair be increased, this deputation to consist of Messrs. Arthur Johnston, W. W. Ballantyne, A. W. Smith, D. G. Hanmer, Wm. McNeil and Lieut.-Col. J. A. McGillivray." Carried.

The Executive was asked to appoint the judges and to consider the advisability of making a rule that only baled hay be allowed in the Fair building.

After the election of officers the meeting adjourned.

OFFICERS FOR 1906.

<i>Honorary President</i>	F. W. HODSON, Live Stock Commissioner, Ottawa.
<i>President</i>	ARTHUR JOHNSTON, Greenwood.
<i>Vice-President</i>	LIEUT.-COL. J. A. MCGILLIVRAY, Toronto.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT, Toronto.

COMMITTEES FOR 1906.

- Executive*.—ARTHUR JOHNSTON, Greenwood; F. W. HODSON, Ottawa, Ont.; A. P. WESTERVELT, Toronto; HON. NELSON MONTEITH, Toronto; HON. JOHN DRYDEN, Toronto; A. W. SMITH, Maple Lodge; W. W. BALLANTYNE, Stratford; WM. JONES, Mt. Elgin; PROF. G. E. DAY, Guelph; WM. MCNEIL, London; D. G. HANMER, Mt. Vernon; J. H. SAUNDERS, London; LIEUT.-COL. J. A. MCGILLIVRAY, Toronto; President G. C. CREELMAN, Guelph; LIEUT.-COL. ROBT. McEWEN, Byron, J. T. GIBSON, Denfield.
- Cattle*.—A. W. SMITH; HENRY WADE, Toronto; ARTHUR JOHNSTON; HON. JOHN DRYDEN; W. W. BALLANTYNE; JOHN BRIGHT, Myrtle; A. F. H. JONES, Guelph; J. M. DUFF, Guelph; JOHN M. TYSON, Guelph; President G. C. CREELMAN; JAS. BOWMAN, Guelph.
- Sheep*.—JOHN JACKSON, Abingdon; JAMES TOLTON, Walkerton; A. W. SMITH; LIEUT.-COL. J. A. MCGILLIVRAY; J. M. GARDHOUSE, Weston; JAMES MILLAR, Guelph; WM. A. DRYDEN, Brooklin; JOHN T. GIBSON; R. H. HARDING, Thorndale; LIEUT.-COL. ROBT. McEWEN.
- Swine*.—WM. JONES; PROF. G. E. DAY; D. C. FLATT, Millgrove; G. B. HOOD, Guelph; J. E. BRETHOUR, Burford; THOS. TEASDALE, Concord; R. H. HARDING; JOHN BARBER, Guelph.
- Dairy*.—PROF. G. E. DAY; W. W. BALLANTYNE; PROF. H. H. DEAN; GEO. A. PUTNAM, Toronto; J. G. CLARK, Ottawa; JOHN McKEE, Norwich.
- Poultry*.—WM. MCNEIL, London; A. W. TYSON, Guelph; F. W. HODSON, Ottawa; W. R. GRAHAM, Guelph; ALLAN BOGUE, London; F. C. ELFORD, Ottawa; J. H. SAUNDERS.
- Judging Competition*.—PROF. G. E. DAY; JOHN T. GIBSON; J. E. BRETHOUR; JOHN JACKSON; W. W. BALLANTYNE; LIEUT.-COL. R. McEWEN; H. S. ARKELL.
- Seed*.—G. A. PUTNAM; PROF. C. A. ZAVITZ, Guelph; L. H. NEWMAN, Ottawa; JOHN BARBER; G. B. HOOD.
- Reception*.—J. P. DOWNEY, M.P.P., Guelph; HON. NELSON MONTEITH; HON. JOHN DRYDEN; F. W. HODSON; A. W. SMITH; President G. C. CREELMAN; Mayor GEO. SLEEMAN; A. F. H. JONES; J. M. DUFF; ARTHUR JOHNSTON; LIEUT.-COL. J. A. MCGILLIVRAY; A. W. TYSON.

COMMITTEES IN CHARGE OF RINGS.

- Cattle*.—A. W. SMITH, JOHN BRIGHT, HENRY WADE, LIEUT.-COL. J. A. MCGILLIVRAY, ARTHUR JOHNSTON.
- Sheep*.—JAS. TOLTON, JOHN JACKSON, J. M. GARDHOUSE, LIEUT.-COL. R. McEWEN.
- Swine*.—MAJOR HOOD, JOHN BARBER, WM. JONES, THOS. TEASDALE.
- Dairy*.—W. W. BALLANTYNE.
- Judging Competition*.—PROF. G. E. DAY, JOHN T. GIBSON, J. E. BRETHOUR, JOHN JACKSON, W. W. BALLANTYNE, LIEUT.-COL. R. McEWEN, H. S. ARKELL.
- Superintendent of Buildings*.—D. G. HANMER, Mt. Vernon.
- Assistant Superintendent*.—J. H. SAUNDERS, London.

**FINANCIAL STATEMENT OF THE ONTARIO PROVINCIAL WINTER FAIR FOR
THE YEAR ENDING DECEMBER 31, 1905.**

Receipts.

Legislative Grants	\$5,500 00
Dominion Government Grants.....	542 00
Gate receipts	2,105 70
Net receipts, advertising in prize list	318 50
Ingersoll Packing Co Grant....	50 00
Whyte Packing Co. Grant ..	50 00
Wm. Davies Co. Grant	100 00
Park, Blackwell Co. Grant ..	25 00
Geo. Matthews Co. Grant	25 00
Joseph O'Mara, Grant	25 00
Bogardus & Co., special prizes.	50 00
Dominion Shorthorn Breeders' Association Grant	300 00
Can. Seed Growers' Ass'n prizes and ribbons	132 00
Canadian Ayrshire Breeders' Association Grant	23 00
Canadian Holstein-Friesian Breeders' Ass'n Grant	100 00
Canadian Hereford Breeders' Association Grant	17 00
Milk sold from dairy	44 16
Dressed poultry sold	75 57
Stall and protest fees	15 00
Sale of swine carcasses	819 43
Birds sold in selling class	66 50
Fees	2,846 40
Special cash poultry prizes.....	393 50
Sale of catalogues	21 35
Miscellaneous	5 85

Total \$13,650 96

Expenditures.

Balance due Treasurer from previous year	\$ 59 70
Directors' expenses	261 70
Secretary's salary	500 00
Postage and stationery	246 73
Advertising and printing	952 74
Office help, including expenses at Show	603 45
Telegraph, telephone and ex- change	45 51
Freight on coops and express...	41 10
Judges and Judges' Clerks.....	500 20
Lectures and public meetings...	193 25
Reporting meetings	79 00
City of Guelph, payment for 1905	260 00
Heating building	72 00
Swine carcasses sold	819 17
Dressed poultry sold	76 89
Lighting building	219 18
Police services	25 00
Birds sold, selling class	66 50
Milk sold	44 16
Prizes paid	7,739 75
(a) General help at Show	628 20
Block Test expenses	42 85
Lumber and hardware	81 97
Feed and straw	116 33
Cartage, storage and rent of chairs	74 90
Supplies, Poultry Department.	12 80
Refunded fees	15 75
Freight refunds	5 80
Auditor	5 00
Miscellaneous	12 40

\$13,802 03

Balance due Treasurer.. 151 07

Examined and found correct, this 30th
day of January, 1906.

(Signed) J. M. DUFF, Auditor.

ARTHUR JOHNSTON, President.
A. P. WESTERVELT, Sec.-Treasurer.

(a) Including Superintendent and Assistants, Auctioneers, Ticket Sellers and Clerks issuing Farmers' Institute passes.

Eastern Ontario Live Stock and Poultry Show, 1906

This Show was held at Ottawa, Ontario, March 5th to 9th, 1906, in buildings of the Central Canada Exhibition. These buildings were fitted so as to make very comfortable quarters for the exhibits, but they were not well suited to the educational purposes of the Show. It is expected that the next Show, to be held March 4th to 8th, 1907, will be accommodated in the new building, now in the course of erection.

The classes for beef and dairy cattle, sheep, hogs, poultry and seeds were, as a rule, well filled, and the quality surpassed that of previous years. Much interest was taken in the practical addresses delivered during the Show.

LIST OF OFFICERS.

List of officers for the Show held in March, 1906, was as follows:

<i>Honorary President</i>	F. W. HODSON, Ottawa.
<i>President</i>	J. C. SMITH, Hintonburg.
<i>Vice-President</i>	J. G. CLARK, Ottawa.
<i>Secretary-Treasurer</i>	A. P. WESTERVELT, Toronto.

COMMITTEES.

- Management*.—The President, Vice-President and Secretary; F. W. HODSON, Ottawa; O. E. CULBERT, Ottawa.
- Executive*.—J. C. SMITH; J. H. GRISDALE, Ottawa; A. W. SMITH, Maple Lodge; J. G. CLARK; N. F. WILSON, M.P., Cumberland; THOS. TEASDALE, Concord; R. CLARK, Ottawa; J. M. GARDHOUSE, Weston; J. A. RICHARDSON, South March; DAVID BARR, Renfrew; O. E. CULBERT; GEORGE HIGMAN, Ottawa; F. J. BLAKE, Almonte.
- Cattle*.—J. G. CLARK; A. H. FOSTER, Twin Elm; N. F. WILSON, M.P.; JOHN R. REID, Ottawa; G. C. CREELMAN, Guelph; THOS. McDOWELL, Shawville, Que.; HON. W. C. EDWARDS, Rockland; A. W. SMITH; T. J. GRAHAM, Mosgrove.
- Sheep*.—J. H. GRISDALE; J. M. GARDHOUSE; J. A. RICHARDSON; R. R. SANGSTER, Lancaster; C. W. YOUNG, Cornwall.
- Swine*.—THOS. TEASDALE; J. C. SMITH; R. CLARK; J. H. GRISDALE; PATRICK COLLINS, Jr., Bowesville.
- Dairy*.—J. A. RUDDICK, Ottawa; J. H. GRISDALE; THOS. GAMBLE, Ottawa.
- Poultry*.—O. E. CULBERT; F. H. GISBORNE, Ottawa; G. H. HIGMAN; F. J. BLAKE; F. C. ELFDON, Ottawa; W. R. GRAHAM, Guelph.
- Seeds*.—WARDEN GEORGE BOYCE; B. BOTHWELL; F. BRADLEY; J. C. STUART; G. H. CLARK; L. H. NEWMAN, Ottawa.
- Reception*.—F. W. HODSON; His Worship, the Mayor of Ottawa; Ald. STOREY.
- General Superintendent*.—J. A. RICHARDSON, South March.
- Poultry Superintendent*.—R. E. MCKINISTREY, Ottawa.

LECTURES ON PRACTICAL SUBJECTS DELIVERED IN THE LECTURE ROOM DURING THE SHOW.

Mr. G. C. Creelman, President of the Ontario Agricultural College, Guelph, very acceptably acted as Chairman of the meetings.

SELECTION AND BREEDING OF BEEF CATTLE.

By G. E. DAY, PROFESSOR OF ANIMAL HUSBANDRY, O. A. C., GUELPH.

This subject is such a large one that it is difficult to know just where to start. It is a subject that has been discussed so fully that it is almost impossible to offer anything new with regard to it. I shall, therefore, simply attempt to open up the subject for discussion, and I trust you will all take part.

It is not my intention to urge any man to breed beef cattle, and it is not my intention to urge any man to breed hogs, dairy cattle, sheep or horses, as opposed to breeding any other class of stock, but what I want to say to-day is something to those who are interested in the breeding of beef cattle, who believe it suits their conditions, and who believe in the stock industry. The question every man should ask himself, no matter what class of stock he is breeding, is, "Why am I breeding these animals?" and I suppose the answer would be, "I am in the business for the money there is in it, and for the pleasure I get out of it." Then the question is, "How are we to proceed in order to get the most money out of the business?" Most people who are breeding any class of stock are not doing so for their own particular pleasure, but they are breeding for customers. It is the customer who has to furnish the money, and if you are producing anything for a certain class of customers, you must make a careful study of what that customer demands. The customer is the only person you have to consider. You may say a general purpose horse suits you best, and that is all right, but the question you have to ask yourself is, "Will that class of animal meet the demands of my customers, and will it find ready sale at the highest prevailing price?" If it does not, it is not going to be a profitable animal for you to breed. You must not consult your own likes and dislikes too much. You must consider the people to whom you are catering. We must always keep in mind what we call the utility side of the question, and we are not going to make the highest success in breeding beef animals, unless the breeder and the feeder, and the butcher and the consumer are considered. No matter how well an animal may suit the butcher or the consumer, if it is not of such a character that it will rapidly make economical gains, then it is not the best utility animal. And if we keep the feeder and the breeder only in view and neglect the butcher and consumer, then we have a one-sided animal. It is possible to produce an animal that will suit the consumer and the feeder, and it is this class of animal which constitutes the highest type of utility animal, and which every breeder should aspire to produce.

I presume that there are people here who have not before their minds a very clear idea of just what the markets demand, or just what they are aiming at in breeding. There are very many people who follow a sort of happy-go-lucky, hit-or-miss system. Sometimes they come out all right, and sometimes they do not get what they want. If you look at the men who are attaining the highest degree of success, you will find they are producing

this utility animal. I presume I do not need to tell an audience of this kind, that a pure-bred sire is better than a scrub or grade. You say you know all about the importance of a good sire, and yet it is astonishing how many people there are who believe that, but do the opposite. There are a great many men in this country who send their cows to a grade bull, because they get the service for fifty cents when they could send them to a pure-bred bull for \$1, and when they come to market the steer, they will find that the fifty cents they have saved has cost them all the way from \$5 to \$25. (Applause.) That is a point that many of us overlook; 50 cents wise and \$25 foolish. It is hard to get that instilled in some men's minds so that they will believe it.

Now, you say, "What constitutes a valuable bull? Because he is pure-bred and has a pedigree, is he necessarily a good bull?" Not by any means, and, therefore, it is not only important to select a pure-bred bull, but it is necessary to make a selection from the pure-breds, because you will find a great many inferior bulls among pure-bred animals.

When we come to look over the history of cattle breeding, how many really good sires stand out prominently? Very few, considering the number of sires that have been used in this country and in Great Britain. Yet how few of us are willing to pay the difference in price between an inferior bull and a good one. There are, of course, fads in connection with breeding. There are some families of cattle whose importance has been magnified, and the result has been that inferior animals in those families have been bred from in preference to really excellent animals outside of these families, and the result is injury to the families concerned, no matter how excellent they may have been in the start. I have been asked the question, "Which is the more important, the pedigree or the individuality of the animal?" There is no definite answer to that question. It is a matter of degree. It depends upon how good the pedigree, or how good the individual. You have all heard of the German who was buying a bull and the man from whom he was wishing to buy was telling him about what a wonderful pedigree it had, and the German said he would be willing to take a little less pedigree and a little more bull. (Laughter.) Because an animal belongs to a certain family, it does not follow that it must necessarily be a good animal. I think that in the first place we must have merit in the individual. He must have the essential qualities of a beef animal; that is, thick fleshing qualities and constitution, and he must bear the marks of being what we call a prepotent sire. A bull must possess the essential qualities of a beef animal, but we also want something else. An animal may possess a good deal of merit in himself, and may not transmit to his progeny his own merit, but he may transmit some very bad qualities inherited by his ancestors. You know how these things will disappear for a time and crop out again. We have in our stables at the present time, an Aberdeen-Angus bull of excellent quality. His mother is well marked, and, as far as I know, she was bred all right. His sire was bred by Sir George MacPherson Grant, who possesses the premier herd of Polled Angus cattle in Great Britain. You would think that bull was perfectly safe to use, but his calves are coming with all kinds of white markings. His sire was all right and his dam's sire was all right, and yet we see these white markings cropping out. We have only four calves so far from him, and they all have these white markings. No doubt these white markings have been inherited from some distant ancestor. They have lain dormant for several generations, and are now cropping out in the progeny of this bull. It is an example of how qualities may come down from past generations, and it shows how careful we must be. The man who has knowledge of the characteristics of the ancestry of a bull has certainly a very

great advantage over the man who does not possess this information, for, just as this bull is well marked and yet does not give well-marked calves, just so any bull may be a very good individual in himself, and beget very inferior calves. The pedigree simply means the ancestry of the animal, and if we have the pedigree satisfactory, and the individual satisfactory, or reasonably so, the chances are the animal will be a satisfactory sire. The bull that comes of good parentage, though he may not be fashionably bred, will make a satisfactory sire in nine cases out of ten. I would appeal to all right-thinking men not to use an inferior bull simply because his pedigree is a fashionable one. He may not transmit the good qualities, but he may transmit his own meanness. The latest ancestors have a great deal more influence than the more remote. Some men will say this bull is a Duchess of Gloster, or a Lavender, or some other noted Scotch family, but when you make a search, you may find that the last three or four sires were very common, ordinary bulls, and it is ridiculous to prefer a pedigree of that kind, because so far back in the pedigree is a prominent name. The chances are that the blood has been so diluted that it has no influence on the individual. The top crosses are the ones that are likely to have the greatest influence. I would prefer a bull where the top crosses are excellent, to one that traces back to ever so noted a cow, but has a number of inferior top crosses. There is a great deal of nonsense in this question of pedigree. Of course, a man who is breeding pure-bred cattle cannot afford to ignore the great families, and his selection is restricted. He must have them of certain families, and he is often put to its wits end to get sufficient merit. The man who is producing cattle for the butcher, however, requires to pay special attention to the top crosses, and to the individual merit of the bull he is buying. (Applause.)

THE CHAIRMAN (Mr. G. C. Creelman): I am going to change the programme a little, because of a very agreeable interruption. We have with us on the platform, at this particular moment, one man among the million of farmers who have been engaged in farming upon this American continent, who stands out, and who has been for fifteen years at the head of the Agricultural Department of this Province, and as he is here with us, I take the liberty of calling upon the Hon. John Dryden to address you on the subject of beef cattle. (Applause.)

Hon. JOHN DRYDEN: I am afraid that if I had had any idea that I would be asked to make a speech I would not have come into the room. I came in to hear what Prof. Day had to say. I remember the time, not so very long ago, when there would not be a man who would discuss the subject like this. He would be afraid that people would think he was full of egotism and thought he knew more than anybody else, or that he was trying to puff up his own individual cattle. I have been one of the foolish ones all my life, or ever since I have come before the public. My theory has been that the farmers, especially, ought to stand together more than they do. I thought if it was good for me, it was good for others, and that if I knew anything that helped me I ought to be willing to give it to other people, because, in helping them, I helped myself. There is not a class of people in this country who pull away from each other more than the farmers do. They are jealous of one another, and that ought not to be the case, and I will tell you why.

Supposing you have in your neighborhood eight or ten good steers to sell, and supposing you have some better than anybody else, how will you get the most out of them? By coaxing your neighbors to produce ten like them, and when you have a half dozen men in the neighborhood each with eight or ten good steers for sale, you will have the buyers chasing one another around the country to buy them, but if there is only one man who

has eight steers for sale, only one man will come to buy them and he will name his own price.

One of the great difficulties, with some farmers, is that they only know about half as much as they ought to know about animals. They want to get a perfect one, and it is quite a job to get such an animal, because they do not exist in sufficient numbers to go around. We cannot all get perfect animals, and we will have to do the best we can, and it is the man who can size an animal up and pick out the best one for him that is going to get along.

My son, who is running my farm at the present time, wrote to me and said, "Father, all this educational work that you are doing is spoiling our trade."

I said, "What do you mean?" and he said, "I mean just this: these fellows have been to those judging classes, and they have studied what kind of a head an animal ought to have, and the kind of horns they ought to have, and how far their eyes ought to be apart, and one thing and another, and they come around here and I haven't the exact stuff to show them." There is a very good bull, but there is some little thing wrong about the head, it is too long between the eyes and the nose, and the man says, "I don't want that," and so he goes from one to another and sees something wrong in all of them; and while these little points don't amount to so very much, yet the things that are important, such as constitution, good flesh, etc., which I would look for first, and that my son would look for, they don't seem to see at all.

It is not the exact length between the eyes and the muzzle, or the exact color of the muzzle, that is the real thing. Down below that is the constitution of the animal, the depth of flesh the animal is going to carry, or its milking qualities. Remember what I say: you will find very few perfect animals, and you have got to size them up. Take a slash in. Don't be too timid about it. Don't go to a sale and stand around, and because Tom McMillan isn't bidding don't stop your bidding. I would like to see the time when the farmers of this country will have independence. I have seen it over in the Old Country. The men go to sales there with their mind made up that they want a particular animal, and then they go after it. Even if you do make a mistake, if you don't bid up into the thousands, you can get rid of your animal without very much trouble, and then you can try it again, and you will find that experience is a better teacher than either McMillan or I. Take a shot at it yourself and get hit a little, and you will find out.

If you are breeding for beef don't be afraid to combine a little of the milk with it. I prophesy that the day is not far off when a man will have Shorthorns that will produce meat and milk, and they will be at the top of the market in this country; and that is the class of cattle that is going to be in demand for the average farmer. When you get away from the big city where you can supply milk, or from the cheese factory, the farmer has got to look to something else; and I think Shorthorns, that will produce both beef and milk, will be in demand. They say it cannot be done, but I tell you it can be done, and the reason I say so is because it has been done; and another reason why I say it is, because it is being done now, and what some man has done in the past and what some man is doing now, can be done in the future.

We have discouraged the milking propensities of beef cattle, simply because we have had the beef type only in our minds, and the time is coming when we ought to turn our attention in that direction, and I will be glad

if in the future the Shorthorn breeders will take the same view of this subject that the dairymen do, and have some provision made for record tests of Shorthorns. The original Shorthorns were notoriously heavy milkers, and many cows of the breed are good milkers to-day. They will be developed more and more in this respect.

FINISHING AND MARKETING BEEF CATTLE.

By THOS. McMILLAN, SEAFORTH.

In the course of my remarks I desire a responsive expression from my audience. I do not come here, wishing or desiring to convey the idea that I know all about the business of beefing cattle. I simply come to give you the benefit of my knowledge and experience along this line. As I proceed, I hope you will freely drop in your questions and make observations at any time, because in this way we can get much more information than we otherwise would.

There are two or three special qualifications, which a man requires to be possessed of in order to make a success of this business. In the first place, he requires to be a student of the markets to such an extent, that, as far as possible, he may have an accurate knowledge of the general condition and trend of market prices throughout the year. It is a great mistake to buy our feeding animals when the market is high in price. In my experience we can buy them to better advantage from the end of August till the snow flies than at any other time. Last fall more particularly, we found it easier to buy them just before the cattle were stabled than earlier in the season. I am not so conversant with your local conditions in this section of country, but as far as the western section of our Province is concerned, many of the farmers seem to have not got tired struggling with the labor problem, have seeded most of their farms to grass, and have gone exclusively into the pasturing of cattle. As a consequence there is a great demand for grass cattle in the spring, with a corresponding slump in prices, when the pastures must be relieved in the fall of the year. So long as this condition continues there is no doubt there will be a greater margin between the prices of stockers and fat cattle than we have experienced in the past. We found it so last year, when I was able to buy my fifty steers much cheaper than for the past six or seven years.

Not only do we require to study the market, but we must understand the kind of animal to buy in order to make a success of the business. We must realize that the day of the high backed, raw-boned, scrub steer is past, and the narrowing margin of profits will not enable us to handle them to advantage. We must have an animal of low blocky type. When I am purchasing feeding cattle, there is no other one characteristic to which I pay more attention than the eye of the animal. The eye will give a better indication of the general health, disposition, constitution, and feeding quality of the animal than any other single characteristic. We should reject an animal that has a hollow, sickly looking eye. I have seen animals that seem to be fairly well developed, yet when you look at the eye, it has that sunken, unhealthy looking appearance which should always be rejected. We want an animal with a good constitution, showing a good heart girth, well developed along the back, over the loins, smooth over the haunch and pin bones, with the buttocks reaching well down to the hocks. These are the portions of the carcass which always command the highest price. In this respect

there must always be a compromise between the butcher and the feeder, in that, while the butcher demands that the animal be well developed in these portions of the carcass, yet, along with this favorable development he must be pleased to accept an animal that is also well developed in the lower lines for that is the development of an animal which indicates a good feeder. An animal that is tucked up in the flanks and cut up behind the front legs is one of undesirable conformation for the feeder.

Q.—What difference would you make between a bullock with a long head and one with a short head?

A.—I do not like to see them with a scrawny head, or too long from the eye to the nostril, nevertheless a long head is not always an indication that the animal will not be a good feeder. I like to see them with a full mild eye, broad in the forehead, rather short from the eye to the nostril, with the nostril well spread out.

Q.—Would you put the eye ahead of other points.

A.—I would reject an animal with an unhealthy looking eye. We have often heard the expression that the eye is an indication of constitution and vitality not only in man but animals as well.

Q.—I have seen a very fine looking animal, and at times its eyes would not look very good. The animal was not in condition.

A.—You will not get an animal well developed in all its points, that has a weak eye, and if it is out of condition, that fact should condemn him and he should not be purchased.

After buying we stable our animals before it gets too late in the season. Our guide has usually been when there comes a succession of night frosts, and the grass becomes frozen. After we start to house them we keep them in the stable. It is a mistake in the late fall to house the animals during the night and allow them to roam over the pasture during the day time. Our food should be prepared in advance of stabling that the animals may be fed regularly and liberally from the day they go in. Regularity in feeding must be observed, and then the animals just know when to expect the next ration. If this ration is withheld for half an hour they will remain restless until it is given. The stable should be kept clean and tidy. Food should not be allowed to accumulate or lie round in the feed alleys from day to day. To secure a profit from our animals kind treatment is a first necessity. At each feeding they should not be given a greater quantity of food than they will lick up good and clean.

With these precautions for animals that weigh about 1,200 lbs. at the commencement of the feeding period in the fall when stabled the following is our daily food ration. For animals which we intend finishing on grass to have them ready to ship in July or August: 35 lbs. silage, 5 or 6 lbs. cut straw, 2 lbs. grain (a mixture of oats, barley and goose wheat which we grow as a mixture) and mill feeds (bran and shorts). This food is mixed together in the feed room once each day, and along with it the animals get a small feed of long clover hay once a day. As the feeding period advances we gradually increase the grain and mill feed ration to such a degree that the animals will be getting 4 lbs. per day by spring.

With the animals we intend to finish in the stall by April or May we withdraw the cut straw in February, add more clover hay, increase the grain ration to 8 or 9 lbs. per day, adding oil-cake and corn meal to the mixture, and during the close of the feeding period, somewhat reduce the quantity of silage. These rations are, of course, only approximate as no one man can tell another just how much food his animals require or will

take, therefore every herdsman, to make a success of his business must use his brains and exercise good judgment. The great secret being to gradually increase our meal ration until we get up to the limit, never feeding a less quantity this week than the previous one, thus keeping the animal always on the move, watching carefully their excrement and general condition, which is a great guide as to whether or not they are getting more grain than they can properly digest and assimilate.

You might ask "Why have such a long feeding period?" In my case I am six miles from the point of delivery, where the animals are weighed. and in a section of country where we are subject to heavy snow falls in winter. If we seek to finish our animals for January, February or March markets. and have to travel them six miles through the deep snow to the weigh scales, we have found that such usage would shrink them to such an extent that the gains would be rather unsatisfactory. In this respect we must be governed by our situation and conditions. Then again we generally find the export prices rather unsatisfactory up to the end of March.

Q.—How many pounds of grain do you call a finishing ration?

A.—Eight or nine pounds. Individual animals may take more. It is a great mistake to feed too heavy grain rations. That conclusion has been reached by the most successful feeders in our country. Prof. Day has also proved it from his feeding experiments at the O.A.C. I have watched him closely in the conduct of his feeding experiments for years. They show a watchful care in every particular, always giving to the public the benefit of any doubt in his own mind, so when he says an experiment is conclusive, I take it as such, because of the great confidence which years of such careful work has inspired.

Q.—What quantities of oats, barley and goose wheat do you sow?

A.—One bushel oats, $\frac{1}{2}$ bushel two-rowed barley and $\frac{3}{4}$ of a peck of goose wheat, sowing rather better than $1\frac{1}{2}$ bushels per acre of the mixture.

Q.—Do you ever put in any peas?

A.—Sometimes, but they often have the effect of lodging the grain so badly that it becomes very difficult to harvest.

Q.—Do you feed turnips?

A.—As I have had better success in the growing of mangles I feed them but not to my fat cattle. When feeding 35 pounds of ensilage per day, it does not pay me to mix roots in the ration.

Q.—Do you feed much bran with barley meal and ground meal, and is it a good thing to feed?

A.—I would rather feed pound for pound of bran and shorts with the mixture than feed all grain.

Q.—How much salt do you allow per head?

A.—Half an ounce or so per head per day, sprinkled over the silage when mixing the cut feed ration.

Q.—Do you think the ensilage with a large portion of cob in it takes the place of turnips?

A.—Not altogether. Although it has the succulency, yet there is something in the turnip that has a more favorable effect than the chemical composition of the turnip would indicate. My opinion, however, is that it does not pay me to grow and feed them along with good silage to my finishing cattle.

MARKETING.

During the past twelve years I have always finished so many of my cattle on grass, and with the exception of two seasons, 1903 and 1905, we

have secured higher prices in the month of July than in April or May. It costs in my section from \$5 to \$6 per head to rent pasture to finish the animals on grass. It will cost about the same for the extra grain ration to finish in the stable. During the finishing period in the stable you must exercise such an additional watchful care over the animals, and the labor question is such a grave one, that, when we are able on the average to get rather a better price and heavier gains on pasture we prefer finishing the bulk of our animals in that way.

Q.—Do you feed any grain on the grass?

A.—Not lately, as our animals are some little distance from home; but in the past I have had heavier gains per day by feeding grain upon grass than upon any other system of feeding.

Q.—Do they shrink or fail after you put them out on the grass?

A.—They will shrink for the first ten days or so, but at the end of a month you would be surprised to know how well they regain it all and sufficiently more as well. From 45 days pasture I have had an average gain of 100 lbs. and from the 10th of May till the end of July an average gain of from 120 to 140 lbs. There must, however, be a good roughage of pasture. Pasture lands will give the best returns when they are in that condition that one would almost think the grass is so rank it is going to waste.

Q.—You would have to wait longer than the 10th May to get them on grass around here.

A.—More particularly if your pasture were cropped bare in the fall, and again of course, we must be governed by our local conditions.

Q.—Do you make the change from the dry food to the pasture at once?

A.—Yes, and to aid in making the change we like a good roughage of old growth on the pasture.

Q.—What do you consider a good average gain?

A.—Some animals will gain very much more than others. Individual animals have given up from 400 to 450 lbs. of gain. Two hundred and seventy-five to 300 lbs. is a good average gain for a herd of animals.

Q.—What profit would you have from that to pay for the food you give them?

A.—A year ago my bullocks cost me \$52 per head. When finished I sold these cattle at nearly $5\frac{1}{2}$ cents per pound, realizing from them \$82 each. Counting my silage at \$2 per ton (and I can grow and harvest it for \$1.25 per ton), straw \$1.50 per ton, grains at 1 cent per pound, clover hay \$6 per ton. This ration will cost 7 cents per day for 180 days, \$12.60. Extra grain for finishing in stable or for pasture \$5 or \$6. The sum of \$20 per head will pay well for everything and I then had \$10 per head of a margin of profit.

This year my animals cost \$46.50 per head, and if I get $5\frac{1}{2}$ per pound I will have a greater margin than a year ago. The whole business is one which requires a shrewd judgment and discrimination in selection with good business ability in buying and selling, always bearing in mind that high class animals in prime condition will sell themselves.

IMPROVEMENT OF FARM CROPS.

By L. H. NEWMAN, SECRETARY CANADIAN SEED GROWERS' ASSOCIATION,
OTTAWA.

Since the main prosperity of the people of Canada depends largely upon the extent of the crops, the subject of crop improvement becomes an exceedingly important one. Heretofore, when an increase in our crops has been

sought we have looked to better cultural methods as a means to this end rather than to the use of better seed. To-night we shall discuss for a short time how we may improve the productive capacity of the seed itself not because this phase of crop improvement is most important but because it is most neglected. Generally speaking this neglect has been largely due, not so much to a lack of enterprise on the part of the farmer as to a lack of a proper appreciation of the life processes of plants. We must learn to recognise that all work performed by the plant may be divided into two classes, viz., first, nutrition and secondly reproduction. In order that nutrition and growth can take place to best advantage the seed bed must be a suitable one as regards physical condition and the supply and availability of the elements of plant food found therein. In order that a good plant be produced the seed must be large and plump in order that the embryo may have adequate support during the germination period. This seed should produce a plant having to a large extent the shape, character, and individual peculiarities of the parent plant from which they have been inherited. These plants therefore have organs of reproduction. This fact was not made known until the latter part of the eighteenth century, when Thomas A. Knight, an English physiologist, crossed the plant known as the Sweet William with the Carnation, and by that act proved the presence of sex organs in plants, together with the fact that, by proper breeding, plants, like animals, can be improved. Contemporaneous with Knight, Van Mons, a noted Belgium horticulturist, took up a similar line of work, and showed that by selecting plants which came nearest his ideal he could improve the strain appreciably without hybridizing. Hybridization is looked upon as the only sure way of inducing plants to vary and has been used largely by plant breeders for that purpose. Fortunately, however, our plants will vary considerably if left to themselves, thus making it possible for the man of average intelligence to improve his crops by selecting those plants varying in the right direction. All careful growers will have noticed this variation in plants. Sometimes we find a plant that possesses characteristics decidedly different from those of an adjoining plant, while again plants of a different character will be found together in groups depending largely upon their environment. Under wild conditions we know that the character of the plant is determined largely by the struggle for existence. A plant or an animal will struggle along under most adverse conditions. Improve these conditions and latent powers hitherto unsuspected will show themselves and will create great modifications. We have also every reason to believe that plants are not similar in every detail, and that these innate differences are transmissible.

The variations to which all plants are subject may be divided into two classes, and it is important that these be recognized. The first of these is a sudden variation, which takes place during the growth of the plant, the reasons for which being difficult to account for. We believe, however, and what is of greater importance, that the newly acquired characters resulting from this variation are capable of being transmitted to the offspring. The second class of variation is one which is due to an abrupt change of environment, a superabundance of food, air or moisture. Very often there is found on low lying parts of a field, plants that have larger heads than have others found on higher points. Investigation goes to show that when seed from such plants is sown under normal conditions these newly acquired characteristics are not necessarily reproduced. It is much better therefore to select seed from plants which have varied from adjoining plants, and which are naturally better. We may not know why they vary, but we know they have shown a superiority over their neighbors, and we should select from these

rather than from plants which have had extra good cultivation or a superabundance of food or moisture in parts of the field thus stimulating a temporary superiority.

The law of heredity, the principle to which all animal breeders look in their work of improvement, is not generally so closely associated with plant life, and yet it is quite as important in this connection, and must form a like basis for improvement. And until we realize that such characteristics as vigor of growth and productiveness in plants are capable of being transmitted to the produce through the seed we can hope for very little improvement along these lines.

In undertaking to improve any one crop we must in the first place look to the variety. We know a great difference between varieties exists. Farmers get good seed from experiment stations, and wonder why it does not remain good naturally without requiring any special attention. This is where the mistake is so often made. We have no guarantee whatever that high-class seed and the succeeding generations will remain high-class where no discrimination is made between the good and the bad seed produced from it. When we get a good variety, therefore, we should see to it that its high standard be maintained. This will necessitate the use of large plump seed even if we do not know the plants from which such seed comes.

In an experiment carried on at Guelph with oats, 16 bushels more was secured from large plump seed than was realized from small plump seed; and in barley larger yields likewise resulted from large plump seed than from small plump seed, while a similar difference prevailed in the case of spring wheat and peas. This shows the necessity of using large plump seed, and in fact the very best seed we can get.

Going further we have the results of the Macdonald-Robertson Seed Grain Competition in which 1,500 boys and girls started and which bears ample evidence of the possibilities for still greater improvement in our farm crops. Each competitor in this competition was required to sow a quarter of an acre of wheat or oats. He was recommended to sow it in a certain way, and at harvest time he was required to go into the plot and select by hand a sufficient quantity of heads from the most vigorous and productive plants to give him enough grain when threshed and cleaned to sow a quarter of an acre the next year. Prizes were awarded on the following basis. Each competitor had to select the best 100 heads at harvest time and send them to the department, where they were threshed and cleaned and the kernels counted and weighed. Out of 1,500 competitors who started in the work about 400 carried it out for the three years. In the case of the spring wheat the average yield per acre for all Canada the first year was 25.32 bushels. The next year we found an increase in the average number of grains per head: an increase in the quality and weight, and an increase in the yield, of five bushels per acre. In 1902 we had still a greater number of grains per head, the quality had improved, and another increase of five bushels per acre was realized. In the case of the oats, the average yield was 54 bushels the first year, while at the end of the three years it had gone up to 73 bushels, or an average increase of 19 bushels per acre. Undoubtedly these competitors gave their plots the very best conditions possible; but they are unanimous in saying that the great amount of improvement was due to this system of selecting the very best seed from the best plants year after year. While therefore it is important that the largest and plumpest seed be used, still if we would gain best results we must go a step further and choose the parent plants.

Every careful grower will have noticed the difference between the product of one wheat plant and another and of one hill of potatoes and another. Not only will he have noticed a difference between the different plants as regards the total yield, but he will have noticed in every head of grain the presence of smaller kernels and in most hills of potatoes the presence of smaller ones. It has been proven that a small plump seed from a productive plant is better for seed purposes than is a large plump seed from an unproductive plant so that it is not enough that we simply get large plump kernels. We must on the other hand go a step further if we desire best results and see that the plants from which these large plump grains came have been the very best as regards their ability to produce large yields.

We now have an organization known as the Canadian Seed Growers' Association which aims to encourage still further the improvement of plants along these lines. In this Association the same system is followed as was used during the competition, and the same fundamental laws are recognized. The Association requires that at least a quarter of an acre of land be operated, thus affording a sufficient scope for making a wide selection.

To give an illustration of the possibilities of the work I might cite the history of the Red Fife Wheat. In 1842 a man by the name of Fife, living in Otonabee Township, Ontario, sent to a friend living in Glasgow for some seed wheat. This seed was secured by the latter from a cargo that had recently arrived from Germany. Mr. Fife, not knowing whether it was a winter wheat or a spring wheat sowed it in the spring but it turned out to be a winter wheat as none of it matured except three heads. There were selected and sown the next year in a small plot by themselves and from that plot was secured the Red Fife Wheat that has made Canada famous as a wheat producing country. Where improvement is sought through this system of continuous selection it is important that the breeder keep but one ideal in view. With this ideal before him he should select in the main for a strong, healthy, vigorous plant and one that is superior to its neighbors in respect to this ideal but not so influenced by external conditions. All subsequent progress now lies in continued selection carried on persistently year after year. By the system as outlined the breeder operates his plot with two objects in view, viz.: First, to develop and maintain a high class strain of seed adapted to the conditions on his own farm; and, secondly, to create a supply of such seed for his own use.

The work of each member of the Association operating under its regulations is inspected each year, and careful performance records are kept. In this way the history and utility of a strain can be determined as it can in no other way and in course of time, if sufficiently improved, the strain is registered as pure-bred or pedigreed seed.

The work of this Association offers many inducements as it opens up a field of unlimited possibilities. Furthermore it should be the aim of every farmer to be a breeder of at least one class of stock or crop as it will make him more systematic and observant and will correct his judgment in many things.

SEED CONTROL ACT, 1905.

By G. H. CLARK, SEED COMMISSIONER, OTTAWA.

The Province of Ontario is a large producer of Alsike and Red Clover seeds. In the average of years, fully one-half of the total crop produced is exported to foreign countries. The balance is retained for our home trade.

Judging from our experience in seed testing and in seed investigation work during the last five years, I would say that fully 95 per cent. of the seeds of grasses and clovers used in Canada are Timothy, Alsike and Red Clover seeds. Timothy seed is produced to a limited extent in all of the Provinces, but particularly in the Georgian Bay District and in the Ottawa and St. Lawrence Valleys. The greater part of the Timothy seed used in Canada is imported from the United States and is grown in Illinois, Iowa and some of the neighboring states in a large way.

The Toronto market is said to control the world's prices for Alsike seed. Great Britain is our best market for clover seeds, though in some years considerable quantities are shipped to Germany and other Continental European countries. The development of the guarantee system in those countries to which we export our seeds, (by which system the farmers are able to obtain, with the seeds they purchase, a statement showing the percentage of purity, vitality and other qualities which go to make up the real value of the seed), has had a marked influence in raising the standard of quality of the seeds they purchase from Canada and other countries. To meet this demand for a better and still better quality of clover seeds, our Canadian seed merchants have had to equip their cleaning plants with the best modern machinery for recleaning these small seeds. In some years, as much as 25 per cent. of Alsike and Red Clover seeds as purchased from farmers, have to be cleaned out in order to raise the 75 per cent. to a quality fitted for the export trade. It is much to be regretted that during recent years there has been a fairly good demand on the part of farmers, and consequently on the part of irresponsible local seed vendors, for the cheaper grades of grass and clover seeds, and some of our wholesale houses have found it convenient to supply such demands from their supplies of cleanings from seeds that are exported. Our investigation work during the years 1902, 1903 and 1904, made it clear to us that the sale of these poor qualities of seeds was a most fruitful media for the wholesale distribution of weeds from field to field and from Province to Province. Since the inauguration of the Seed Laboratory at Ottawa, and of the investigation work which followed, a strong effort has been made to demonstrate the false economy and the far reaching evils that follow the purchase and use of such low-grade clover seeds. Many samples were found to contain more than twenty species of weed seeds, amounting in all to over 50,000 weed seeds per pound of seed offered for sale for seeding. Following this educational work, there was a very large increase in the demand for seeds of superior quality, but, knowing their inability to determine the noxious nature of the impurities that are always found to a greater or less extent in grass and clover seeds, there arose a demand among farmers, of the class who are willing to buy and pay a fair price for good seed, for some legislation that would, in a measure, restrict the dissemination of noxious weeds in agricultural seeds and that would prevent gross misrepresentation on the part of unscrupulous and unreliable seed merchants in the matter of quality of the seeds they sell.

I heard an eminent statesman once say that if the people in any community wanted to govern themselves badly, they should, within certain limits, be given the privilege to do so. In drafting the Seed Control Act the same principle may be said to have been applied. The object of the Seed Control Act is not to compel any farmer to buy, or any seed merchant to sell, seeds of a better quality than they desire to buy and sell, except in so far (Section 6) as the use of seed extremely foul with noxious weeds, is generally acknowledged to be the commencement of a public nuisance in the locality where it is used. The object of the Act is to provide the means so that farmers who, as a class, cannot be expected to equip themselves with an expert

knowledge of weed seeds, may purchase their seeds intelligently and with a full knowledge of the presence of the seeds of any of the worst weeds that may be contained therein. It has been said, and very loudly proclaimed by some seed merchants, that farmers are exempt from the Act. That is not true! Farmers are exempt only from the provisions contained in Section 3 of the Act, and only then when they are selling seed produced by themselves on their own farms to a person who is to use the seed himself, and to whom the seed must be delivered on the premises of the seller. Farmers buy and exchange seed grain a great deal, and in so doing they have better means than can be provided by legislation of finding out the condition in respect to the noxious weeds on the farms of their neighbors from whom they procure seed. If they deliberately go to one of their neighbors and buy their supplies of seed from fields that are polluted with wild mustard or wild oats, I am of opinion that we are unable to do very much by legislation that will help them.

Section 3 of the Act requires of seed merchants or of farmers who are not selling their seeds to be re-cleaned or are not selling them on their own farms that when the seeds of any of fourteen species of the worst weeds be present in the seed offered for sale for seeding, it must be clearly represented to the purchaser that such weed seeds are present.

Section 4 fixed the standard of quality in respect to purity and vitality for Timothy, Alsike, and Red Clover seeds that are labelled No. 1, or otherwise represented by the seed merchant or farmer to be of first quality. The marking of samples "No. 1" is absolutely optional to the seller, but if he chooses to make such representation with seeds he is selling or offering for sale, they will be expected to conform to the standard named in Section 4.

Section 5 of the Act provides for a margin of tolerance, but this margin may be changed by the Governor-in-Council from year to year. Without this section the Act would call for absolute purity and this is recognized to be impossible under the present condition of the supply of agricultural seeds. On account of variation in the quality of samples that may be taken from the same bulk lot, we found it advisable in fixing the margin of tolerance, to commence with, to allow one of the weed seeds named in the Act to 1,500 seeds of the sample offered for sale in the case of grass and clover seeds, and one noxious weed seed per pound in the case of cereal grains. This margin of tolerance is quite sufficient to protect seed merchants who desire to conform to the spirit and text of the Act, and who make an honest endeavor to determine for themselves whether the seeds of the weeds named in the Act be present, and if they know them to be present, no matter in what quantity, to represent them accordingly.

Section 6 of the Act provides a minimum standard of five noxious weed seeds per 1,000 of Timothy, Alsike, or Red Clover seeds offered for sale. If the weed seeds named in the Act be present in a greater proportion, they are prohibited from sale for the purpose of seeding in Canada. This would allow of the noxious weed seeds named in Sections 3 and 4 of the Act approximately 411 in one ounce of Timothy seed; 212 in one ounce of Alsike seed and 92 in one ounce of Red Clover seed, which will readily be seen to be a very objectionable sample.

It is exceedingly gratifying to be able to say that the improvement in the conditions of the seed trade during the last four years has been very great. What is most needed at this time is an improvement in the quality of the seeds produced. On account of the expensive labor during the last three or four years, our Ontario farmers have been unable to do all they would like in

a way to control weed pests in their seed crops. On account of the Seed Control Act and of the demand on the part of farmers for seeds that will grade No. 1, a much wider discrimination in prices paid to farmers for Alsike and Red Clover seed will be made in favor of the cleaner article, and this difference in price will probably be quite sufficient to meet the cost for labor that is required under present conditions, to clean a clover seed crop before it is cut.

The Seed Control Act may be said to be under trial this year. No doubt any remaining gaps will be found before the season is through. One difficulty already experienced is the use on the part of a number of seed merchants of terms that may, for a time, be misleading to seed purchasers. I might mention that the term "Government Standard," which is being very largely used can scarcely be held to be synonymous with "No. 1," and it is probable that any seeds that will conform to the standard as provided under Section 6 of the Act, may not be held to be sold in violation of the Act, though labelled with the term "Government Standard."

WEEDS, AND HOW TO ERADICATE THEM.

By T. G. RAYNOR, SEED BRANCH, DEPARTMENT OF AGRICULTURE, OTTAWA.

This is a very great movement that we are undertaking in interesting the farmers all over Canada in the improvement of their seeds. Considerable efforts have been made in this direction during the last few years and the work has been carried on more strenuously than in the past, and I am glad to know that our Seed Commissioner, who was given this important work to do under Prof. Robertson is home with us, having just arrived from the North-west.

I will address myself at once to this question of cleaning up the land. In order to get a large crop it is necessary to have clean land, and my purpose to-night is to introduce a few of what we consider the worst weeds in our farms, and the best means of getting rid of them in order that we may clean up those farms of this noxious weed life. I will be able to introduce to you a few new weeds that you have not yet considered, and if I can incite sufficient interest so as to put you on the look out for these weeds my talk will not have been in vain. We have weeds in this country which have come here through the purchase of clover and grass seeds, and this is largely due to the fact that the farmers have been buying second grade seed. You can easily understand that some seeds might be in existence in the centre of Ontario, and that weed seeds would find their way to some of the leading seed houses and from there it would be sent to all parts of the Province, and these low grade seeds have in this way done a great deal of damage, and we ought to put up a big fight against them.

In order to intelligently set to work to clean up the land, we ought to know something about plant growth, and we should study the life of the noxious weeds in order to know how to get rid of them in the shortest possible time; we should know how many years they require to complete their growth, and what effort they make to reproduce themselves. We have three classes of plants brought to our notice. We call the first class annuals, because it only takes one year to complete their life history, and we have a special class that we might term winter annuals. Those that start to grow in the fall of the year and the severity of the winter is not sufficient to destroy their vitality,

and then next year they start up fresh as ever and produce seed that season. If we prevent an annual from going to seed it is self-evident that we have destroyed that plant.

We have another class of plants that are a little harder to deal with, which we call biennials, because it takes two years for them to complete their life history. As an example of the annual I might submit to you the mustard, which is a very common weed in all parts of the country. The ordinary red clover plant requires two years to complete its life history, and among the weeds which come in that class are the blue weed. These are examples of biennial plants.

The hardest class to deal with are the weeds whose roots live in the ground from year to year, and which are capable of spreading themselves not only by seed, but also by their roots. We call them the perennials. There are two classes of these perennials, some of which the roots only remain in the ground and do not spread, and others where the roots are capable of growing out and spreading themselves. Very common plants of that character are Quack and Couch grass, and the Canadian Thistle, and the Perennial Sow Thistle.

I maintain that every farmer should have a knowledge as to whether a plant belongs to the annual class, the biennial class or the perennial class, in order that he may set to work to successfully combat these classes of weeds. I have had a good deal of personal knowledge along this line, having spent most of my life on a farm,—and it is not a clean farm. We made a great effort to clean out the noxious weed life on that farm, but I did not suppose we could ever hope to get free of some of them. The best we can hope for, is to keep them in subjection so that they will not cost us very much extra effort over the ordinary farm operations to keep them down.

There is no doubt that a very important factor in favor of keeping our farms clean is proper rotation in cropping. We cannot advance a system of rotation in cropping that would meet every farmer's wants, because localities differ, and some crops that were grown in Eastern Ontario would not be successful in Western Ontario. Where the farm is very weedy we advise a short rotation where clover and a hoed crop come in once in three years in succession. We can grow a crop of grain as the third crop, and with this rotation we can safely combat the worst forms of noxious weed life if we give our farms thorough cultivation. Another very important thing in dealing with weed life is to give the kind of cultivation that is best suited to destroy the kind of weed we are dealing with. Some weeds can be dealt with in one way and another weed needs a little different attention, and what may destroy one weed will simply stir up the ground and make it a hot-bed for the growth of another weed.

I would like to draw your attention to some excellent laws that are practically a dead letter in the Province of Ontario. In the North-west Provinces they have very stringent measures to check weed life. They have a weed inspector whose duty it is to destroy weeds, and he can even go to the extent of destroying crops for the purpose of destroying the weeds. There is no law in Ontario that will allow an inspector to go into a farmer's field and destroy the crops for the purpose of killing weeds, but there are some splendid laws to destroy weeds along railways and along road allowances, and there is a law for the destruction of weeds that grow along the road-side. The duty of a roadmaster a few years ago was to allow some men to work out their road tax in destroying the weeds at the time the Statute Labor was being performed, and very often at that time these weeds were just in their normal growth and

were not sufficiently advanced so that cutting them off would materially check their growth, and before the season was over these weeds went to seed. During the last session of Parliament they changed that law and made it so that the road overseer's duty was to inform each owner to destroy all the forms of weed life on the road adjoining his property, and if he does not do it after he has been given due notice, the road overseer can cause these weeds to be destroyed and charge it against the land. I was pleased last summer to see a number of farmers carrying out that law. I saw them with their scythes in hand destroying the weeds. There is a law in Ontario that makes it a penalty for a farmer to knowingly sell any grass or clover seed, or any grain of any kind containing weed seeds of the six following weeds:--Canadian Thistle, Wild Mustard, Ox-eye Daisy, Ragweed, Wild Oats and Burdock. If the presence of any of these are in a sample, and a man sells them knowingly for seed purposes, he is liable to a fine of not less than \$5 or more than \$20; and right along side of the same statute we find the clause that a farmer who knowingly uses any kind of grain that has smut in it without first treating it with some of the up-to-date methods is liable to a penalty of \$5, or not more than \$20, but not many pay attention to that statute. We have a good many laws upon our statute books, but they have been dead laws.

One of the most interesting things discussed at the Farmers' Institute meetings has been this weed problem, and many of the farmers have been intensely interested in the matter and we believe the time is opportune for the farmers to strike out, and strike hard to prevent our farms from being inoculated by the weeds of our neighbors. I do not take the ground that we should encourage litigation, but I say we should put these laws into operation and enforce them. For a couple of years I had the privilege of discussing with the farmers of Minnesota certain conditions of plant life, and last year at every meeting they asked the question: "How can I get rid of Quack Grass?" And I made up my mind that Quack Grass had the Minnesota farmers on the run. With two wet seasons it spread very rapidly. A number of the farmers in Ontario are pestered with Quack Grass, but I do not know that it has been an unmixed evil. I remember some years ago that Quack Grass was our big enemy, and some of the farmers at that time were just cultivating their lands sufficiently to get their grain in, and if the season was favorable they got ahead of the Quack Grass, but after a while the Quack Grass got ahead of them, and they had to roll up their sleeves and pitch in, and when they found out how to fight the Quack Grass the extra amount of work that was required in ridding the land of that weed also liberated a lot of surplus plant food, and the result is that we have a great many better farms to-day than we had before. Another weed that has come to our notice during the last two or three years is a plant with a yellow blossom, and it has been discovered in a great many grain fields; it is called the Perennial Sow Thistle. It is a plant that is going to do a lot of harm. The seed that is attached to the parachute can be carried an incredible distance, and as it ripens before the grain ripens it is a very easy matter to have a ready distribution of that weed seed. If you put the harrow on it the little pieces of plant that have been cut up will be spread all over the field and start up new families. If we had localized it when we first noticed it and smothered it out, it would have been a great blessing to the country. Some time ago the farmers of Dakota got some flax seed from Russia, and in that seed they got the Russian Sow Thistle, and if they had immediately eradicated it from the land it would have saved hundreds of thousands of dollars to the farmers of that State. This Russian Sow Thistle grows as big as a wash tub and spreads

itself very rapidly. We have not got it yet in Ontario so far as I know, and I hope we never will, because it is a very bad weed. The Orange Hawk Weed was brought over to this country as a flower, and now it is over-running a lot of our rough pasture, and in the Eastern Townships of Quebec it is very bad. Sheep will not eat it, neither will a pig, and when it gets into a place where you cannot cultivate the land it is bound to have full sway, and in time it is bound to cover the land to the exclusion of everything else. It will even grow under shrubs and trees. The Orange Hawke Weed is a perennial. Another weed that grows in rough pastures is the Blue Weed, sometimes called the Blugloss and Blue Devil. It does not go to seed the first year, but the next year it comes up again, and if you allow it to come to perfection the second year it will produce seed—it is the same with the Burdock—and if in the second year you can cut it off below the crown with your spud you will kill it. If you go over the rough meadows when it is about in the blooming stage, before the seed has begun to form, and if you cut it down low to the ground you will have no more trouble, but if you cut it off in the earlier stage of the game it will come up again and go to seed before the season is over. If there are only a few plants you can cut them off with the spud; but be sure and cut them off below the ground.

Of all the weeds that are hard to get rid of the Bindweed seems to be the worst. Do not confuse it with the ordinary Bindweed, that is sometimes called Wild Buckwheat; that is not the plant. This has a bell-shaped flower, that looks very much like a Morning Glory, and it is called the Wild Morning Glory, and when that once gets into the land it is pretty hard to get it out. When you have doubled your efforts of getting rid of the worst weed you know at the present time then you may be able to get rid of the Bindweed. When you first discover it put tar paper over it, or put on so much coal oil or acid on it that you will destroy the whole thing.

The Perennial Sow Thistle is a close running mate to the Bindweed. We thought the Canadian Thistle was a bad weed to get rid of but since we have been seeding down to clover we have got rid of it. What is the philosophy of that? We find that since we seeded down every three or four years with red clover and took two cuttings of clover the same season that the Canadian Thistle did not amount to very much. We used to summer fallow for the Canadian Thistle, and plow four or five times, and in doing that we simply cultivated this thistle. We have now found that the clover plant destroys the thistle, because at the time the clover was ready to cut, it was only ready to blossom, and when we cut the thistle the stock was hollow, and the water got in the hollow and started to decay. Then the thistle made extra effort to spread itself, and instead of one plant starting up, three or four started up, and by the time the second crop of clover was ready to cut the thistle is about ready to blossom. When we cut it off again we have drawn on the extra supply of the root, and they are so weakened the next spring that we see nothing more of the thistle; and if there are any you can put on a hoe crop and you can get rid of the thistle in that way.

If we can handle our crops so that the weeds will not go to seed we can whip any weed, I do not care what it is. There are fields that are practically abandoned in the Ottawa Valley for agricultural purposes on account of the Sow Thistle, and if the farmers will keep from twelve to fourteen sheep on their farms they will help to keep their farms clean. There are very few weeds that sheep will not eat, and I believe that sheep are an important factor in helping us to deal with weeds, and particularly with the Perennial Sow Thistle. We can get rid of the Quack Grass by fighting it intelligently, and

the best way is to try and smother it and not try to stir it up too much. Take a field where Quack Grass is growing, in the fall of the year, and just before the ground freezes up, plow it so as to turn over that soil and tear the earth away from the roots and expose them on the surface, and a large number of the roots will rake out dead in the spring the result of hard freezing. There will be lots of roots that the frost will not touch, and if you go over that in the spring with a spring tooth cultivator, if the weather is dry, you will kill them all, but if it is wet it is more difficult. I do not know any better method for dealing with Quack Grass, and many other forms of weeds than this cultivator that has the wide shear attachments that you can set so as just to cut them off a couple of inches below the surface, and if you keep that going till about the first of July you will get rid of them.

The Dodder plant has got into parts of Ontario, and it should be watched. The Wild Carrot, the Horse Weed, the Worm Seed Mustard, and Chicory are very bad weeds; look out for them.

L. S. KLINCK, Agronomist, Ste. Anne de Bellevue, Que: I am sure I have listened with a great deal of interest to the addresses of the evening. Whenever we get a man in any district to follow out this system of selecting seed, we find a marked improvement. It is surprising to find how few fanning mills there are in some districts. I believe that the fanning mill lies at the foundation of successful improvement of seed grains. Until such time as we use the fanning mill and get out the large, plump grains, we are not prepared to make much improvement. Of course hand selection is much better than the fanning mill, but comparatively few farmers will take the time required to make a careful hand selection. The fanning mill produces a wonderful increase not only in yield but also in quality, and if we can go a step further than that and make it a matter of continuous selection, we will have made a decided advance.

The CHAIRMAN: We have had a very practical meeting and if any of you desire to ask any questions before we close we shall be pleased to have them answered.

Q.—Is there any danger in selecting the big stooling plant? In England I believe they sow the seed thicker so as to prevent stooling.

Mr. NEWMAN: I think, perhaps, Mr. Campbell is right. In the United States, where they grow so much corn, they pay more attention to getting one good ear on a stock rather than two or three.

Mr. KLINCK: The point just raised is a good one. The Joannette oat stools evenly and the quality is of the highest. With some varieties they stool evenly, and as some of the stocks are short, many of the grains are small and of poor quality.

ADVANTAGES OF AND PROFITS IN SHEEP RAISING.

By A. W. SMITH, MAPLE LODGE.

I have been very much interested in sheep raising for a good many years. We have had sheep on the farm on which I live ever since I can remember. I have always taken a very great interest in them, and, since I have come to the years of discretion, and been able to discriminate between losses and profits on a farm, I have taken considerable interest in finding out whether there was a profit or a loss in the raising of sheep, and I can give my evidence in support of the fact that there is no part of the farm industry that has been more profitable, year in and year out, than that of

sheep raising. There are times when the prices are very low, and we have passed through a time in which the price of wool has been so low as to be discouraging, but even during that time there has always been a profit in raising sheep, if they are cared for along economic lines. On the farm on which I live we have always raised pure-bred stock, and when you come to consider the profits from a flock of pure-bred sheep and one that is raised simply for commercial purposes, there is a difference, and it is within the hands of the man owning the flock to make it successful if he is breeding pure-bred stock, more so than it is if he is in the commercial side of the business. Now I do not mean to say that the man who is handling sheep for commercial purposes has not got it within his power to make his profits greater or less, but I want to say that there is more opportunity for a man breeding pure-bred stock to show his individuality, and he can become a prominent feature in the profits. When a man is engaged in raising pure-bred stock the amount of enterprise and judgment he is able to put into them will give him greater returns comparatively than it would if he were raising sheep for commercial purposes. If I succeeded in establishing for myself a reputation as a breeder of the highest type of a certain kind of stock, then I will secure a larger percentage of benefit from that reputation than a man would receive who is raising sheep for commercial purposes, even though he establishes a reputation for producing sheep of the best quality for the butcher and the consumer, and produces wool of the highest quality. There is that inducement always before the man who is willing to put the energy and time and money into the raising of pure-bred stock for the benefit of himself and his country. Whoever goes into the business of pure-bred stock has, to a large extent, to be satisfied for a good many years with the thought that if he is not benefiting himself directly, in a financial way, he is at least being a great benefit to the country and to the community in which he lives. I could name quite a number of men who have started breeding some particular line of sheep in a locality, and who have had nerve enough to purchase a ram at a high price, what their neighbor would consider an enormous price, and what they would say was a price that was paid by a crazy man. Yet such a man would pay this price to build up his stock, and it would be years before he would get recognition for the efforts he was putting forth, in order to show these people that there was superiority in the particular class of stock he was breeding. After a few years he is bound to reap his reward, and in the breeding of pure-bred stock there is always that incentive to a man who has the nerve, the ability, the capacity, and the good judgment to carry on a flock of pure-bred sheep that he is doing something that will benefit the country and the community, and something that he has a just right to be proud of.

The profits of sheep raising are, of course, to a good many, one of the greatest advantages. If it is not profitable it is difficult to see the advantage, and when I speak of the advantages, they all bear more or less largely with regard to the profits and the returns that will be received.

One of the greatest advantages of a flock of sheep on a farm is the economic way in which they can be carried. It has been established that it costs about a cent a pound less to produce mutton or lamb than it does to produce either beef or pork, and you can easily see that there is a great advantage there to any man who has the inclination to start breeding a flock of sheep, and that is largely brought about in the reduction in the labor.

It is not necessary to have an expensive outfit in order to start in the sheep business: very inferior protection from the weather is all that is required. In fact, except for a very short period of time in the year, I believe sheep will do better for the owner if they are not protected from the weather

at all. I believe the greatest success can be had in sheep raising if they are left almost entirely out in the air, and I have proven this to my own satisfaction, even in the fitting of sheep for show purposes. I never bring my sheep in from the time there is grass enough for them to go out in the fields in the spring until they are brought in to take to the exhibitions. They are never housed night or day, and I find I can succeed better in that way than I can by bringing them in and housing them. I know that a great many exhibitors still think it is necessary to house them; but I also know that I can feed them more economically and to better advantage, and have more healthy and vigorous sheep than when I house them, and one of the advantages of sheep raising is the small expenditure that is necessary to provide the building to take care of the sheep. Then the different kinds of forage that a sheep will devour and thrive on is another advantage, and it is a very considerable one. I have heard a great many farmers say that one of their objections to sheep was that they were very hard on pasture. My experience is that you can carry more sheep, more pounds of sheep to the acre by 25 to 30 per cent. than you can of any other class of stock; that is when they are living on the pasture alone. Lots of farmers will have all the cattle and horses on the pasture that the pasture is able to carry, and then they will put on a flock of 25 or 30 ewes and lambs, and, of course, these sheep are going to eat close. Sheep naturally do bite close, and the cattle will have the pasture in such a condition that the sheep are compelled to bite close, and then, of course, you will have a short pasture. But if you will take twenty acres, and put cattle on ten acres of it and stock the other ten acres with sheep, and stock both fields up to their full limit, you will find that you can carry from 25 to 30 per cent. more live weight of sheep on the ten acres than you will cattle. I have proven that several times, and I think any sheep man, who has tried it, will bear me out.

Q.—With the fact that they can be produced for a dollar a hundred less, what is the relation between that and the profit?

A.—I think that is one of the places where the sheep pay the best. We have a smaller outlay to begin with, and the cost is less to feed them, and that is where the profit comes in. On my own farm this past season I had a six-acre field in which I placed 30 shearling ewes. It was a second crop of timothy, alsike, and red clover. We always cut the first crop and pasture the next, and then plow it under. This was the second crop and a large percentage of it was timothy. Still there was a considerable percentage of alsike and some red clover. This field had been seeded with grass following roots, which had been heavily manured. The field had been in first-class condition. These 30 sheep were turned on pasture in the spring, as soon as there was anything sufficient for them to eat, and they remained there until some time in July, and yet we were able to cut from that field two large loads to the acre, and these 30 sheep had pastured there continuously, and were never out of the field from the time they were in until the late fall. I do not consider you could do that with the number of cattle that would be sufficient to stock that six acres. I give you these facts to show you that they will not consume nearly the quantity of grass per weight that cattle will.

Another advantage is that they will eat down the weeds that are a nuisance to this country, although they do not destroy the weeds entirely they prevent them from going to seed. You can never see any burdocks growing in a field where there is a flock of sheep, and other weeds are destroyed, and that is a considerable advantage in favour of the sheep. Then the sheep are valuable in manuring the field, which will not be done so thoroughly by any other class of stock. Then the sheep raiser has an advantage;

that any person who has an inclination to go on the farm and raise his family on the farm, and who does not want to be burdened with the more laborious part of the farm work, can take a flock of sheep and can handle them without incurring a very large amount of labor, and yet they can produce a pound of mutton for a cent a pound less than it would cost to produce beef or pork, and it can be done without the labor that is so necessary in the production of beef and pork.

Then we get two crops from the sheep during the year. One of wool and one of mutton, and that is something that we do not get from any other variety of stock, and when we take into consideration, the price of wool at the present time, although it is not very high, yet it is double the amount it was a short time ago, and it is possible to keep a flock of sheep for the whole year for the value of the wool, and then we have the crop of lambs; that may be large or small according to the care and attention that is given to the sheep, and we have that clear profit, and by care and attention the number of lambs raised can be brought up to 175 per cent. of the ewes, and with these advantages in favour of raising sheep, I think no farm in the Province of Ontario should be without a flock of sheep.

The CHAIRMAN: That is a good business talk. Mr. Smith has not been in the sheep business for his health, but has made money out of the business by careful handling of his flock.

Q.—What is the difference between the market value and the production of sheep and cattle or hogs?

A.—For the last year or two the price obtained for lambs has been considerably higher than we received from either cattle or hogs, and I think, perhaps, the most profitable time to market either cattle, sheep or swine is just as young as they can be put in shape for the market. We can get 10 to 15 cents per pound for lambs when they weigh from 60 to 70 pounds. In order to do this you have to be within a reasonable distance of the market.

Q.—Is it possible to get the best profit out of them in the fall of the year?

A.—I do not think the best profit can be secured in the fall. I think a better profit can be made by holding them later on in the winter for the Christmas or Easter markets.

Q.—Taking it one year with another for the last ten years, what difference would there be in the price, selling in the fall or carrying them on until March?

A.—Nearly two cents, somewhere in the neighborhood of \$3 a head.

Q.—Would it not double the price?

A.—I am striking a safe average, and when I say \$3 a head of profit more, by holding them over, I think I am striking it about right.

Q.—I think I can say from the experience of people in our part of the country that they have bought lambs for \$3.50 to \$4 a head in the fall of the year, and have kept them over and sold them for from \$7 to \$10 a head.

A.—When I speak of \$3 I mean over and above the feed.

THE DESIRABLE AND UNDESIRABLE POINTS OF A MUTTON SHEEP.

By G. E. DAY, PROFESSOR OF AGRICULTURE, O. A. C., GUELPH.

In judging pure-bred sheep the animal must be regarded from three points of view: (1) that of the butcher, (2) that of the feeder, and (3) that of the breeder. The butcher, of course, looks at an animal from the standpoint

of how much valuable meat it will furnish for his customers. He wants as little cheap and waste material as possible, and a large proportion of edible meat of the best quality. The feeder requires an animal possessing constitution, and one which is able to consume a large amount of food and turn it into valuable meat at the lowest possible cost. The breeder of pure-bred sheep also requires constitution and feeding qualities, but in addition he will look for certain things which are characteristic of the breed in which he is interested. Some of these things are of comparatively small importance from the butcher's or feeder's standpoint, and yet have considerable to do with maintaining the characteristic peculiarities of the breed in question.

As perhaps everyone knows, the most valuable meat is found over the back, loin, and hind quarter. The butcher, therefore, requires a broad back, a broad loin, and a heavily fleshed leg of mutton. In addition to this, he wants all parts evenly covered with flesh, with no excessive development of fat on any part. He also likes a smooth, compact shoulder, because the shoulder is somewhat cheaper than the parts just mentioned, and he likes to see fine bone, and no tendency towards paunchiness.

If the feeder is wise, he will aim to supply the butcher with what he requires, but he must look beyond these. In order to have constitution and feeding qualities, he looks for a wide, deep chest, good depth of barrel and well-sprung ribs to give ample room for the heart, lungs, and digestive organs. He will also be interested in the question of size, because he wants an animal that will attain a good weight at an early age. A short, broad head, full, bright eyes, an open nostril, and a short, thick neck all go to indicate a vigorous, thrifty animal which will give a good account of food consumed.

The breeder, besides emphasizing all these things which the butcher and the feeder requires, will pay a good deal of attention to the character of the fleece, the color of the skin, and whether the animal in its general proportions conforms to what he considers the best type of the breed.

Sheep are difficult to judge, owing to the fact that they carry a thick fleece of wool which makes examination somewhat difficult. In judging sheep it is well to look the animal over carefully from a short distance, in order to get an idea of its general proportions. From a side view we can get an idea of the length of leg, length of body, the length of the neck, the strength of bone, and the general style and carriage of the sheep. From a front view we can get a good idea of the character of the head, the straightness of the front legs, and the width of the breast. From the rear we observe the set of the hind legs, whether they are well placed, straight, and strongly formed. Having taken a general view of the animal, the judge must then resort to the use of his hands, because many defects may be hidden beneath a heavy coat of wool, and in the close-woolled breeds the shears can be used to cover a multitude of faults. Thus, a weak top line can be straightened by leaving the wool longer over the back than over the shoulders and rump, and the animal can be given a compact, blocky appearance which it does not always actually possess. Just here I would like to say a word regarding the method of handling. Many people are extremely rough in making an examination of a sheep and completely spoil the appearance of the fleece. In handling, the fingers should be kept extended and close together. By pressing firmly with the flat of the hand, the judge can determine whether the top line is straight, and also whether the back is well covered with the right quality of flesh. Then, with one hand on each side of the animal, he can determine the length of the neck, the smoothness of the shoulder, the filling behind the shoulders, the spring of the rib, the width of the loin, and the width of the hind quarter. By placing one hand on top of the sheep and

the other below the body, he can form a good opinion of the depth of the chest and of the barrel. At the same time he can also determine whether the sheep is well covered with wool underneath, because any bareness of wool in this region is decidedly objectionable. He should pay attention to the length of the quarter, and also to the manner in which the flesh is carried down on the leg of mutton. By grasping the leg from the rear and then extending the fingers until they reach the twist, he can determine whether the sheep is heavily fleshed in this region. The twist should be low and the thigh thick and heavily muscled. Then there is the question of wool, which varies in different breeds, and the judge must be thoroughly familiar with the kind of wool required in the breed under examination. The finest wool is found in the region of the shoulder, and the coarsest on the thigh. In a perfect fleece there should be very little difference between the fineness at the shoulder and the thigh, though it is practically impossible to secure uniformity. The wool should be even, not only in fineness, but also in density on the different parts of the body. There is a tendency for the wool to be less dense along the back than it is along the sides, but the greater uniformity and density we can secure, the better the fleece. The length of the wool should also be reasonably uniform, and if the exhibitor has found it necessary to trim down some of the wool very short in order to improve the appearance of his sheep, it should count as a serious defect. The fibre of the wool should be strong, and the yolk should be oily and not in a dry or caked condition. The skin should be of a clear pink color, free from dark spots and also from a yellow, mottled appearance. A pink skin and a healthy condition of the yolk indicated good health and a general thrifty condition of the animal. In breeding classes especially, sound mouths should be insisted upon, and there should be no defect or unsoundness in any part.

Q.—You like a short, thick neck and a good, thick dock. Why do you like a thick stick.

A.—A thick neck that swells out and blends well with the shoulder gives a better covered shoulder, and is usually associated with thickness through the heart, indicating constitution. You will generally find that a long neck is associated with a lack of vigor.

Q.—If you have ever seen an experienced buyer of fat sheep in England buying sheep, you will never see him touch them anywhere else except on the neck and the dock. The sheep should have a firm, thick dock and a short, thick neck, as these things indicate a large development of muscle or lean meat. This is a matter I have given a great deal of attention to.

Mr. JACKSON: Trimming is not necessarily done to deceive. It is done for the sake of appearances, and it is sometimes done to straighten up the appearance of a rough sheep. It is hard to fool a good judge. I do not think you could fool Prof. Day by trimming. It used to be a crime to be caught trimming a sheep.

Mr. CAMPBELL: I firmly believe in trimming. If a man had a bunch of fat lambs for sale and would take the trouble to trim them before he offered them, he would make the best wages he ever made for his trouble.

Prof. DAY: Trimming a sheep is perfectly legitimate. It is true that trimming may help to cover defects, but all the same the owner has a right to offer his goods for sale in the most attractive form. It is just as legitimate to trim a sheep and make it look attractive as it is to put up butter in attractive packages, or to offer any other class of merchandise in such a form that it will please the eye of the customer.

Mr. JACKSON: I think every man in this country ought to keep a few sheep.

BEST MARKETS FOR SHEEP AND HOW TO SUPPLY THEM.

By J. CAMPBELL, WOODVILLE.

I think enough has been said in the two excellent addresses to which we have just listened to convince any reasonable man that the sheep is a good animal for the farmer to have, and I am sorry that it has not got more friends in the neighborhood of Ottawa. I have been through the district around Ottawa judging sheep at the fall fairs, and one of the things I noticed was the great lack of sheep. The sheep and lambs exhibited proved conclusively that the Ottawa district will produce them of quality equal to any and better than many sections can. We are gathered here as live stock breeders. Live stock was never at a higher level of prices than at the present time. It has been an extraordinary year for pork, beef and mutton. A lot of people in the western countries lost money last year owing to bad buying and speculation, but this season all is bright. The horse breeders are also having a prosperous time; and taking everything into consideration there is no wonder that we are a happy looking lot of people. I have not heard a farmer cry "Hard Times" in seven years. I did not intend to forget poultry; they are a good thing to have on the farm, and they are doing well. This is a very prosperous Province, and one thing that surprises me is that sheep are not kept in greater numbers in Ontario. I am safe in saying that seventy-five per cent. of the farms in the Province are without sheep, and why it should be so is beyond ordinary comprehension.

I have been asked to talk on the best markets for sheep and how to supply them.

We have three markets for sheep at present. The British, the Canadian and the American markets, and they are good, better and best in about the position I have put them. The British market was a very good one years ago.

In the eighties and nineties we sent a great many sheep across the sea at a good fair profit, but we do not do so now. The export trade in sheep at the present time is not worth noticing, and there are two reasons why. In the first place we did not send them the quality that that market demands. Anything we send across the sea must be of the very best. The British people are willing to pay the very best price for the best article, and the cost of freight for a poor article is as much as it is for a superior one. Another reason is because we have not the sheep to send, but I think if we gave the same attention to the sheep business as we have given for the last five years to the hog business or the butchers' cattle, or the dairy cattle, we could still have a good profitable trade sending sheep across the sea.

In order to supply the British market we must send not only a superior quality, but we must send sufficient numbers of uniform quality in order to make a reputation. I like the term Mr. Smith used in connection with the breeding of pure-bred stock "breeders' reputation." We should not forget that we have a Provincial reputation, as well as a national reputation. Of course we are gathered together in connection with an Ontario show, and we naturally think of it as a Provincial matter, and we have a Provincial reputation to uphold in everything we send out of the country. If you have been watching the Chicago markets you will have noticed that an extra trade is springing up and yearlings are selling at over 6 cents a pound live weight for shipment to Britain, and that is more than any butcher's cattle will bring at the present time.

The Canadian market, taking everything into consideration, is a very good one. Of course we are limited in numbers: yet, as Mr. Smith

has just stated, there is a very good trade in early lambs in our towns and cities, particularly in the large cities. We have one class of sheep that is specially well adapted for that particular trade, and that is the Dorset Horn, as they will produce lambs early enough in the season to make it possible to have Christmas lamb. We know people in Western Ontario who have yearly contracts for supplying lambs to Toronto from January to March at profitable prices. Another growing trade in Canada is the supplying of the home market with pure-bred stock. There has not been the demand for our pure-bred rams that there was in former years, because the grade flocks have largely disappeared from the country. Lately a change has taken place, as the farmers have seen their mistake in discarding sheep, and are now re-establishing their flocks, so the trade is reviving. It is safe to say that if any person had a thousand grade ewes in lamb to offer for sale any time since New Year's, by letting the Canadian public know, it would not be necessary to have one of them inside of two weeks, as the demand has been very keen. I have been from home during January and February, and my nephew wrote me once saying, "I have had correspondence enough to sell every sheep on the farm, everything that is on it and the farm itself." So there is a revival in trade, and I believe from now on, we are going to see more sheep kept on Ontario farms that we have ever seen before. It is quite clear that it should be so now that the consumption is growing. I do not suppose we ever had a time in the history of our Province when quality counted for so much in everything, no matter what it is we are purchasing. Quality seems to be the thing we are aiming for, whether it is for the home or the foreign market; we get the highest price if we produce the best quality, and it is well that we should always keep that word *quality* before our minds.

There is another market, outside our Province, which it is worth our while to cultivate. Two years ago I found a strange thing happening in Prince Edward Island. In October and November every lamb that could be secured was being sent from the Island to Boston. One dealer had the monopoly, and he was sending them off while they had, right at their own door, one of the best markets on the Continent, that at Sydney. Still the farmers were selling their lambs to be shipped when they could be sent at a greater profit to the Sydney market. They are doing it still, and leaving the Sydney market to draw its supplies largely from Ontario. In the winter months the Sydney people get large shipments of mutton from Muskoka, and they get their beef from Guelph. One of the largest meat dealers in the city of Toronto told me two months ago that he had a thousand carcasses of lamb in cold storage. He said he could buy cheaper and save them until spring, when values were much higher as a rule.

We have a limited membership in the Sheep Breeders' Association compared with the other associations, and yet limited as we are, I will say that the breeders of sheep have done more to advertise the live stock of the Province of Ontario and the Dominion of Canada than all other breeders in Canada put together.

1893 we won at the World's Fair at Chicago a great many prizes and gave Canada the biggest advertisement she ever had up to that time.

One of the things that used to grieve me was to find that the people in the Old Country did not know the difference between us and the Americans, but after what we did at the World's Fair at Chicago the people across the sea began to know us, and in 1895 and 1896 Canada was known, and the people of Ontario were known, as separate and distinct from the Americans.

The World's Fair at St. Louis was in many respects the greatest the world has ever seen, and of all the horsemen in Ontario only one exhibited

there, and he did remarkably well, making a clean sweep. Only one dairyman went over, and he did extra well. Four swine breeders went over and secured a large share of the offerings. Fifteen sheep breeders went over and they all, without a single exception, did exceedingly well, showing to the world that in Ontario sheep of the different breeds are produced which can win against the world.

Two of the sheep breeders of the Province of Ontario went to Portland, Oregon, showing very successfully at the World's Fair held there, and no doubt, drew the attention of the people of the Western States to the goodness of Canadian sheep.

One of the greatest hindrances to the sheep business in Ontario is the dog nuisance. I do not think the sheep breeders are being given the protection and assistance by the Government that we should have.

Another point I want to make is that, while we are not jealous of the dairymen, we think the Government has been doing more for the dairy cow and the dairy interests. I take the stand that the Governments, both Dominion and Provincial, have not been giving the same assistance to the sheep breeders as to the dairymen, and I see by the estimate of the Province that an additional eleven thousand is being given for dairy instructors. I believe if the Government would take hold of the sheep interests and assist in some way the business would have its proper place in our Province.

At present the American market is the very best we have, both for the fattened lambs and pure-bred stock. Twelve carloads of sheep left the Guelph Winter Fair for the International Exhibition at Chicago last fall, and we came back with 90 per cent. of the premiums offered there. The sheep breeders of the Province have been making a reputation in America that is second to none on the Continent of America. At the St. Louis Fair not a single Canadian judge officiated, and when our sheep were judged in competition with American sheep we were given the prizes. This shows we can produce the very best sheep that can be grown on this side of the sea, or anywhere else; as the best money could buy, or breeders anywhere could produce were gathered at that great exhibition. If I ever felt more proud of my country at one time than another it was when I was in the city of New York and saw on butchers' waggons the words "Canadian Lamb" printed in bright letters. That was on the sides of the waggon, and what did that indicate? It showed that Canadian lamb was the highest standard, and was the best quality of lamb they could offer to their customers. Not many miles from where we are to-day a gentleman has a yearly contract to supply one of the fashionable clubs of New York with dressed carcasses of lamb at twenty cents a pound in the carcass. That is one of the results of the reputation Ontario sheep have on the other side of the line. Another important fact is that for several years past some of the prize sheep and lambs at Guelph have been contracted for to supply the Waldorf Astoria Hotel in the city of New York, which is the highest priced hotel on the continent of America. They charge from ten to forty dollars a day, and why is it that they charge so high? Because they furnish their guests with the best of everything, including Canadian lamb. (Applause.) That is the point I want to make. It shows that we have the reputation and the trade. The city of New York alone consumes from sixty to seventy thousand carcasses of lamb every week in the year. The market is open to us. If we had kept to the sheep trade as we should have done it would have meant millions of dollars to the Province this year. Another mistake the people made in the past was marketing lambs in the fall of the year. The American market is similar to the British

market in that they will pay the best price for a good article. There are several kinds of lambs we should not send there. One is the long-tailed lamb, another is the thin lamb, and a third is the uncastrated ram lamb. We should keep our lambs and fatten them, so making more money out of them. Is there a hog raiser here who would grow hogs until they weigh 125 pounds then turn them over to another to finish? There is a duty of 75 cents on a lamb and \$1.50 on a sheep, and we must get them to the American market before they are twelve months old in order to save the extra 75 cents duty. Lambs well bred and well fed in the winter time will carry a good coat of wool, and that makes a material difference in profits, because wool going into the United States is subject to a duty of 12 cents per pound, and it would cost from \$1.25 to \$1.50 to send a fleece over, but by leaving it on lamb's back it goes without a cent of duty and that gives extra value to the lamb sent to the American market as shearing time draws near.

At the present time lambs are selling in the city of Toronto at \$7.25 per hundred pounds live weight, and that is a price we never heard of before. A man in Ohio told me last year that he fed a car load of lambs, 288 little Western fellows, for 90 days and he cleared on them \$933, or over \$10 a day. We have pure-bred flocks from which ewe lambs have been sold at \$25 each, and ram lambs at an average of \$50 per head. If there is any other stock in this country that will pay as well as that then I do not know it. But do not be satisfied with producing second or third class sheep. Aim at having the best. There is always room at the top. There are too many of a low grade. Let a flock of sheep get the same attention you are giving the dairy cow and the bacon hog and you will get more profit out of it, with greater certainty than from any other live stock we know of in Ontario to-day.

Q.—What grade of sheep would you recommend?

A.—That depends altogether on a person's fancy. There is plenty of room in this country for all the different grades of sheep we have got. When it comes to producing butchers' lambs I think the carcass of Shropshire rams on long-wool grade ewes will give the best results nine times out of ten.

Mr. SMITH: I know that is claimed very frequently, but still I think the butchers' lamb can be produced as well from the pure-bred as from the cross. The tendency of breeders has been to get a uniform type, and I do not think there is as much in that claim as there was ten or fifteen years ago.

Mr. CAMPBELL: I do not think it pays to produce one thing and then another. If you cross stock of one class do it properly. We have the people, we have the sheep, and there is no climate on earth equal to ours for producing the highest class of mutton sheep so free from disease and troublesome disorders.

SOME MUTUAL INTERESTS OF THE PACKERS AND HOG PRODUCERS.

By C. W. BOWMAN, MANAGER MONTREAL PACKING CO., MONTREAL.

The business interests of the farmer in rearing, fattening and marketing hogs, and that of the packer who kills, manufacturers and re-markets the product in the shape of hams and bacon are in one sense quite separate and distinct. Each interest is quite different, and yet they are but two parts in one industry, and it necessarily follows that there is a great deal of unity of interest between the two; what is of interest to one is of interest to the other. The packing business, to be profitable to the packer must be profitable to the farmer. Unless the farmer is making money out of his hogs he

will not raise them, and in order that the farmer may make a profit, the packer must also have a reasonable profit. We have been exporting bacon from Canada for about 35 years, but not until 15 or 16 years ago could the industry proper be said to have had its birth. When, owing to improved stock that was introduced into the country, and improved methods by the packers in curing and packing and marketing the product, our bacon found favor with the English consumers, and since that time it has been gaining in favor, and we have to-day a reputation for bacon that both the farmer and the Canadian packer should be proud of; but we have not yet reached the goal of success because our Danish competitors are receiving to-day anywhere from 2 shillings to 5 shillings per hundred weight, or from $\frac{1}{2}$ a cent to a cent a pound more for their bacon than we do. Nearly all the bacon exported from Canada to Great Britain is sent forward in the shape of what is known as the Wiltshire side, which is practically half the hog. The hog is split in two. The feet and head taken off, and some of the bones taken out, and the side generally trimmed. These Wiltshire sides have to meet certain conditions in order to bring the top market prices. The success of the Danish bacon trade is due to the fact that their Wiltshire sides meet the conditions demanded by the English consumer.

Let us see what these conditions are. Prof. Day, who has had the privilege and pleasure of travelling in Denmark, will tell you that the most striking feature about the Danish hog is its uniformity of length. We have a good percentage of lengthy hogs, and we manufacture good lengthy Wiltshire bacon that is just as good as the best Danish, but the trouble is we have too large a percentage of the undesirable type of hogs. It is impossible to make good Wiltshire bacon out of the majority of breeds of hogs we have in Canada. With the exception of the Yorkshire and the Tamworth, none are suitable for this export cut. You may be surprised to know that the Canadian packer is forced to classify his bacon into some 20 different grades, on account of this great irregularity of length and weight, and of thickness of fat, in order that his best sides may find favor with the British consumer and bring top prices. Our best bacon is equal to the Danish bacon, but the short thick sides bring anywhere from 6, 10 and 12 shillings below the Danish Wiltshire price. The farmer has nothing to gain by growing the small type of hogs. Every experiment that has been made at the Experimental Farms at Ottawa and Guelph has proved that pork can be produced as cheaply, if not more cheaply, out of the bacon type of hog than it can be out of the shorter and undesirable types, so that we are mutually interested in eliminating these undesirable hogs, and as soon as this is done one-half at least of the difference between the Danish Wiltshire price and the Canadian Wiltshire price will be swept out of the way. The Wiltshire sides must weigh between 50 and 65 pounds, that is to say, made from a hog weighing from 165 to 220 pounds, and we have got to kill the short type of pig before they have attained this weight or they get too thick, and good Wiltshire side should not have more than an inch and a half of fat along the back and this should be distributed evenly and not arched in the shoulder, as a great many of the shorter breeds are. Last summer thousand and thousands of hogs found their way to the markets of Toronto and Montreal that weighed from 120 to 140 pounds. These were hogs in prime growing condition and ready to put on from 40 to 70 pounds economic gain, and when we slaughter these hogs we find that we get anyway from 6 to 10 per cent. less of meat and lard than we get from a hog weighing from 180 to 200 pounds. This is a shameful waste in dressing the hog, and at the same time these Wiltshires were bringing on the

English market from one to two cents a pound less than bacon made from hogs weighing 180 to 200 pounds, which had a very depressing effect on the market prices. Although last summer's prices were good, they would have been far better had the farmers kept their hogs until they attained a proper weight.

Q.—Would the packers prefer having all the hogs they handle weigh 180 pounds?

A.—No; there is a certain demand for smaller hogs, and there is a demand for hogs weighing over 200 pounds; but it is pretty safe to say that if every farmer would strive to make his hogs weigh 180 pounds there would be still plenty of hogs under and over these weights to supply the demand for these meats.

Q.—What percentage of the hogs you get would you prefer to weigh 180 pounds?

A.—I would say from 70 to 80 per cent. We would take chances on getting enough light and heavy.

Q.—What percentage do you get?

A.—At the present time I would say between 160 and 200 pounds, delivered at the packing house 60 per cent. I believe west of Toronto they will get a bigger percentage, there is always a bigger percentage of lighter hogs in Eastern Ontario and Quebec than in the west.

Q.—I suppose the percentage of larger hogs is coming up gradually?

A.—Yes, the farmers have at the solicitation of the packers, been making an improvement for the last ten or twelve years. There is no question about that, and we are getting better hogs all the time, but the past summer the quality was very unsatisfactory.

Q.—Don't you think the dissatisfaction was caused by the want of discrimination of the packers in buying?

Mr. BOWMAN: It is possible, and I will admit that it seems that the packer has it pretty much in his own hands to discriminate against these unfinished hogs, but we are just as anxious to have this matter put right as you are, and we realize the importance of it more than you do. Every packer in Canada has been talking this matter over to his buyers for years and years until he is tired doing so, but it seems impossible for the buyer to go into the country and buy hogs on their merit. There are in Ontario a thousand or more hog buyers, and every one of them have had this matter drummed into them again and again, and not one of them buys hogs strictly on their merits. I believe that by following Prof. Day's ideas and using the scales, and by knowing what you are doing you will have many surprises in store. I know that when we first introduced the Tamworth breed in the west, a great many farmers said "We do not want any more of these, they won't fatten;" but after they brought these hogs to the scales, instead of having 160 or 170 pounds as they expected, they had 180 and 190. They did not seem to fill out and be doing as well, but still they had the right weight, and the results were more than satisfactory, and I think you will find that any feeder who is depending on guess work cannot tell exactly what he is doing.

Another point of mutual interest, both to the packer and farmer is a regular supply of hogs. We know that all farmers cannot have hogs ready for the market every month in the year, because the facilities for feeding are not sufficient in all cases, and we know that farmers cannot keep track of what the neighbor is doing, and it follows that the supply must vary to some extent. We will blame the farmer for everything we can, but we will have to take that responsibility off his shoulders. But what is working to the

destruction of the hog trade is, that when the world supply of pork is rather greater than the demand, as it sometimes is when the United States, Denmark and Canada are all sending to the market rather more than the normal supply, and the price is reduced, the farmers go out of the hogs. They say, "If we cannot raise hogs profitably we won't raise them." In the course of two or three months things right themselves, the situation works itself out, and hogs are back to a profitable basis, and as one extreme usually begets another, we find the price considerably above normal values, and it takes 8 or 10 months to get brood sows together and have your hogs fattened for the market, and by this time we have lost our trade, our customers have had to go back to the Danish and American bacon, and then all at once we get beyond the normal supply, and we have to force this bacon into new channels again. We export to Great Britain only 20 per cent. of the bacon it consumes, and as long as we get a fairly regular supply we can very largely increase this proportion. From 1890 up to 1903 our exports of bacon grew from some \$500,000 per annum up to \$16,000,000 in 1903. In 1904 and 1905 the figures fell, and one not familiar with the conditions might be inclined to think our Canadian export bacon market is on the decline, but I feel confident that it is only temporary. The following is an extract recently received from a large bacon dealer in London: "The world's population is increasing. Denmark is a small country and is producing all the hogs it can produce. Someone must supply the hogs. Canada can, and will do it. It is the only country in existence that can give London and the south of England the quality they require, and we have the utmost confidence in the future of this bacon trade." The gentleman who said this is one of the greatest bacon men in Great Britain, and has been handling both Canadian and Danish bacon for the last fifteen years, and we can place a good deal of confidence in his judgment, and I believe we will very shortly have a normal supply of hogs from the west of Toronto, and an increased supply from Eastern Ontario and the Province of Quebec. We have in Quebec Province (at Montreal and Hull) four large packing houses with the combined capacity of not less than 12,000 to 15,000 hogs per week, and I believe I am well within the mark when I say these packing houses do not draw more than 1,500 hogs from the eastern part of Ontario and Quebec, the districts which should naturally supply these houses. We have got the houses, we have faith in the industry and we believe you will find it very profitable to supply us with the hogs.

Q.—What is the capacity of the packing houses now?

A.—I believe 50,000 a week.

Q.—What is the supply?

A.—I believe not more than 15,000 or 18,000 hogs. The last month or so it has been exceptionally low.

Q.—What do you think of the duty that has been put on; will it be a benefit to us?

A.—I do not think it will do the farmers any harm, there are two sides to the question. We believe the situation will soon right itself, if the packers will leave the American hogs alone. We were pleased to see the legislation passed.

Q.—Do you think the Government should assist in keeping out a large quantity of this American cured bacon?

A.—Yes, I think they should do that. There is a very large quantity of American bacon being brought into Canada. Of course at the present time the difference between American hogs and Canadian hogs is very much reduced, but as they have been running the last six or eight months \$1.50 or \$2 a hundred below Canadian prices, the Americans have been supplying the

Canadian trade, and I think our Canadian trade should belong to Canadian farmers, and a duty of at least $3\frac{1}{2}$ cents or 4 cents should be placed on American goods. (Applause.)

Q.—The Americans do not allow our pork to go in the same as we allow theirs to come in here.

THE IMPORTANCE OF THE BACON TRADE TO THE CANADIAN FARMER.

BY HENRY GLENDINNING, MANILLA.

I have been asked to take up the subject of the importance of the bacon trade to the farmer, and I hardly know where to commence on a ten minutes' speech. The farmers of the Province of Ontario have acquired a great deal of knowledge with regard to the raising of hogs within the last ten years, especially where they have come under the influence of the Guelph Winter Fair, the farmers understand that business, perhaps, about as well as any business that is conducted on the farms to-day.

Within the last two months, there has been a good deal of dissatisfaction, perhaps, some of it deserved, and some undeserved, with regard to the pig business, and we find that in many sections of the country the farmers are selling their sows. Professor Day has told us that there is a good profit in the bacon hog, as there is in any line of business the farmer is engaged in, and we should stand by that business, for that is the way we are going to make money. I do not care what line of business the farmer is engaged in, whether horses, cattle, or hogs, if he is making a specialty of it he had better stay in it because there is money in it if you stand right close by the business. One of the mistakes the farmers are making, at the present time, is in thinking that they can produce a thick, fat hog at much less money than they can a bacon type. I think that is a mistake. I have had men ask me where they can get an old fashioned Suffolk. I do not know where to get one, and I am glad to say that there are not very many, if any, left in Canada. It shows the trend of opinion. The argument that is often put up by farmers is that the large bacon hog requires a good deal more food to produce the bone, than it does to produce the fat.

We have with us this morning Prof. Day and Prof. Shutt, and I think they will bear me out in what I say, that when we grow a hog that contains considerable bone, such as the Yorkshire, that the same food that goes to make the fat and lean of the hog is not required for the production of bone. It is, entirely, a different material, the bone is produced from the mineral matter in the food, and there is sufficient bone forming material in the average food of our Canadian farms for the production of good, strong bone in the animal. I think this is one of the matters that farmers are overlooking.

We have heard farmers say, that, if they take their coarse grain and sell it in the market, they will make more money by selling it than they will by converting it into pork. There are two sides to that question. If you sell the grain off the farm, the fertility is removed, and if you convert it into bacon the fertility remains on the farm. Right here in the city of Ottawa, Dr. McFarlane has an office in the Inland Revenue Department, and he analyzed the commercial manures and placed a certain value upon each of the constituents. I think the figures are 13c. for nitrogen; 6c. for phosphoric

acid and 6c. for potash, and if we apply this to grain we will find that when we sell a bushel of wheat, we sell a little over 23c. worth of fertility. When we sell a bushel of corn, 17c. worth; a bushel of barley, 13c. worth; a bushel of oats, 12c. worth; a bushel of rye, a little over 17c. worth; a bushel of peas, about 30c. worth. I think we ought to take these things into consideration, if we are going to sell off our grain, and if you deduct the amount for lost fertility, it leaves a very small margin for the grain.

Now, I do not say that when we feed that grain to the stock, that the whole of it is retained upon the farm. There certainly is some loss, it depends very largely upon the way in which the farmer takes care of his manure. I think, in a general way, we can be sure of saving 75 per cent. These are points that are well worth considering.

Another reason why hogs are of great value to the farmer, is the quick returns he gets. There is not a very large capital invested in the hog, and the returns are made very quickly, and there is no reason why the farmers should give up the hog business at the present time. I think we should do everything possible to keep up the standard of hogs. If we grow the fat hog we will lose in competition in the Old Country, and we will have to take reduced prices. The bacon hog and the dairy business should go hand in hand, and there is no reason why the farmers should not raise a large number of hogs in this section of the Province.

I heard the manager of a mortgage company make the statement that the bacon hog had paid off more mortgages than any other institution in the Province of Ontario. (Applause.)

PROF. DAY: What, to your mind, is keeping up the price of fat hogs at the present time?

MR. GLENDINNING: I think that is a question Mr. Bowman should answer.

PROF. DAY: As it is, there is a limited supply of fat hogs, and the bacon hog is carrying the fat hog with it. I think that is the reason. If you give up the bacon hog, the price realized on fat hogs would go down. There is a demand for a certain number of fat hogs in the Dominion of Canada, but there are not very many fat hogs needed in England, or in any other country.

MR. BOWMAN: Without the bacon hog, we would have no export trade whatever.

THOS. McMILLAN, Seaforth: I think as Mr. Glendinning has been cut down to ten minutes, I should be able to deliver my part of the programme in half that time. After what has been said of the bacon industry, I do not see that I need say very much more. One of the great facts which we farmers must consider is that if we are going to keep on our annual returns we must strive to maintain and increase the fertility of the soil. Mr. Glendinning emphasized the fact, that by selling the grains and fodders from the farm we were selling the soil fertility by the bushel or the ton, and in order to get that back we must engage in some system of stock keeping. I do not think there is a single farmer in the room who will dispute that statement.

We all know that during the last seven or eight years all classes of our people have been much more prosperous in this Province than we were before that time, and if we investigate the matter we will find the source of that increased prosperity has been that during those years our revenue from live stock sold and slaughtered has increased by no less than thirty million dollars per annum, and now amounts to sixty millions per annum. That is for the Province of Ontario alone, and when we consider that out of a total of the sixty millions, some twenty-two millions six hundred and sixty-five thousand

dollars must be credited to the hog, it becomes evident that the hog industry is certainly of great importance to the prosperity of the farmers of the Province. This fact is emphasized when we know that twelve millions of that thirty millions increase must also be credited to the hog.

When we know, as we have been told here to-day, that the hog packing establishments in this country have a capacity of fifty thousand hogs per week, while we only supply fifteen thousand to sixteen thousand, we can easily see that, if this curtailment in the supply continues, it is going to lead to the closing up of some of these packing establishments, and the ultimate result will be that the farmers will be placed to a greater extent than we are to-day at the mercy of those establishments which remain. These facts should cause the farmers of this country to think well ere they seek to further endanger the packing industry, or even so cripple that industry that our packers will lose the vantage-ground in the British market which they now possess. Much has been lately said and written regarding the profits of the hog industry. Consider first the return obtainable for the investment. Out of an investment of \$13,000,000 our annual sales amount to \$22,665,000, whereas in the cattle industry from an investment of \$72,821.00 our annual sales are \$26,343,872, and our dairy products less than \$50,000,000.

Again, I consider the hog is the most economical meat producing animal we have got, much more so than either the ox or the sheep. That is so because it is able to utilize a greater percentage of its food than either of these animals. The hog is able to retain in its system over sixteen per cent. of the dry portion of its food. The ox is only able to retain 6.2 per cent. of the dry portion of its food. Professor Laws, in explaining the reason for this, says that in the case of the hog its stomach and its contents is only equal to $1\frac{1}{4}$ per cent. of its entire live weight. The stomach and contents of a sheep is equal to $7\frac{1}{2}$ per cent. of its live weight. The stomach and contents of an ox is equal to $11\frac{1}{2}$ per cent. of its live weight.

When we come to the intestines we find that the matter is reversed, and that in the case of the hog, the intestines and their contents are equal to $6\frac{1}{2}$ per cent. of its entire live weight; the sheep $3\frac{1}{2}$ per cent. of its live weight; the ox 2 4-5 per cent. of its live weight. Showing that the digestion of the hog takes place largely in the intestines. This is why the hog is such a good digester of food, and why he digests more in proportion to his live weight than either the ox or the sheep, and hence more of his food becomes the food of production.

The only objection we farmers have to the hog, is that it makes use of so much valuable food. That, however, is not the fault of the hog. It is the fault of the farmer who feeds it, and that was brought out plainly in Prof. Day's lecture this morning. We should always consider the nature of the animal we are feeding. The hog is naturally a grass eating animal. It should be given a certain percentage of a food of a bulky and fibrous nature, and if we feed roots, grass and clover hay we will get much more profitable returns from the feeding of our hogs.

I wish to emphasize the remark made by Mr. Glendinning, that farmers make a great mistake in changing from one line of stock keeping to another. That cannot be emphasized too strongly. Decide upon the line of stock you are going to engage in, and having decided stick to that line. If we do this from year to year we will be able to strike the good prices as well as the unfavorable seasons and we are going to make a success providing we exercise wisdom and judgment in connection with the business.

THE DAIRY FEMALE FROM BIRTH TO MATURITY.

BY H. GLENDINNING, MANILLA.

It is hardly fair to ask me to commence at the point of birth, and you will excuse me if I go back a little further. I think in the dairy calf we should start back at the time of the service of the bull. I believe a great deal depends upon the bull as well as the mother. I will assume that the mother is all right; however, we have to deal with her just as we find her. If you have a first-class cow all the better. We should use a pure-bred sire of the breed we intend to breed from. If a cow happens to be Ayrshire or Ayrshire grade, by all means use an Ayrshire sire. If it is a Jersey cow, use a Jersey bull. If a Holstein cow, use a Holstein bull. It is not only necessary that a bull should be pure-bred animal, it should be an animal of good quality. I would prefer using an old bull to a young one, and I would use a bull that has shown by his get that he is capable of giving good dairy calves or rather good dairy cows. And that means that the bull should be at least four or five years of age. I think one of the greatest mistakes the dairy farmers of this country are making is disposing of their bulls when they are about three years of age. Many a bull that would be worth two or three times as much if he was kept until he was six or seven, or a great deal older, is sold at two or three years of age. You have an animal that is matured and he is likely to give you good deal better calves than a young animal.

After the cow is served and during pregnancy, it is necessary that she should be well kept. We must remember that a cow has a pretty heavy strain upon her when carrying a calf, almost as much strain as if the calf were running at her heels. Therefore, I say that during the last few months, and before she drops her calf, the cow should be liberally fed. When the calf comes I think we are not likely to make as many mistakes if we allow it to suck for a day or two. I know some remove the calf at once, and they say they can get it to take the milk more readily, and that there is not so much trouble in teaching it to drink as if it was allowed to suck. Sometimes the calf does not drink readily at first, and then it becomes extremely hungry, and when you feed it it takes a great deal of milk, if you allow it to drink all it wants the result is indigestion. More than one calf has died from the effect of giving it too much new milk. If the calf is allowed to remain with the mother you seldom have any trouble. I do not believe in allowing the calf to suck the mother for any great length of time. I believe that it should be removed at the end of two or three days, and at this time I would say rather under-feed than over-feed; I would prefer feeding the young calf for the first week or so three times a day. I do not think it is necessary to continue new milk for any great length of time to the dairy calf, and I say that at the end of the week we do not give much more new milk. It is diluted with skim milk fresh from the separator. The supply of new milk is gradually lessened for about ten or twelve days. Afterwards, we do not feed it anything at all in the way of milk except pure skim milk from the separator, and with it we add some ground flax seed. All the difference between skim milk and fresh milk is the butter fat, and we add to the skim milk ground flax seed, which contains a very large amount of oil. It is a dangerous thing to heat the milk on a stove before giving it to the calf, because you are apt to get it too hot and scald the calf and stunt it. We put the ground flax seed into a pot, about a handful for each calf, and it is allowed to stand on the back of the stove till it cooks. It is always quite warm, when the milk is ready to go to the

calves the warm flax-seed is poured in, and there is no danger of the calf being scalded by getting the milk too hot.

Q.—What about whey?

Mr. GLENDINNING: I never fed a pound of whey in my life, and I do not know anything about feeding it. Just as soon as the calves will take a little chop we give them some, and as soon as they will eat hay they are allowed to pick and eat as much as they like. After they come in off the grass in the fall we feed silage, turnips, mangels, or sugar beets. In the winter they are allowed to eat straw if they like, we grow a good deal of clover for seed, and in threshing it is broken up and we find they do excellent on that with a little silage or roots. When you come to make a cow out of that calf you should be careful of its management. If you keep it back and do not feed it well, you will spoil it, but do not get it too fat. I don't think there is any time in its life when a little extra feeding would be better, than during the last three or four months of pregnancy. At that time give a little grain and a little extra food. The development of the cow depends very much upon that period, because she is simply developing for motherhood and the maintenance of the calf she is going to drop in a short time, and if you fail to develop that cow or heifer at that critical time you cannot develop her after she has calved. You will have to wait until the next period of pregnancy to get her where she should be. I always consider that the time the cow is carrying the calf is one of the most important times for the making of the cow.

I am sorry to say that in many parts of the country there appears to be a feeling, that if, during the summer, you feed your cows well that is all that is required, and when the fall comes let them shift for themselves. The dairyman who is following that practice is not doing justice to his cows or himself. They will do a great deal better if properly handled and fed at all times.

Q.—Is the flax seed you mix with the milk pure ground flax seed?

A.—Yes, without any of the oil being extracted. Oil cake is simply the same thing with the oil taken out. }

Mr. D. DRUMMOND, Live Stock Branch, Department of Agriculture, Ottawa: Mr. Glendinning has opened up this question and carried it on to considerable length, running pretty near to the maturity of the animal, and I do not think I can say a great deal more about it. He has touched the feeding of the calf pretty well from the time it is born until it drops its first calf, but there is a little more we have to attend to than the feeding, and that is one of the questions I suppose he has left for me. The handling of the heifer has to be taken into consideration, and it is during that first period that you are going to make or mar a cow. She must be carefully and quietly handled. Did you ever notice that around an untidy stable where the cows are abused, that you will have a lot of kicking heifers. You should take very good care of the heifer during the first period of pregnancy. Don't abuse her or hit her. Treat her quietly and gently. When she comes near to the end of her period and begins to develop the udder she requires careful feeding. Mr. Glendinning spoke of handling and rubbing the udder. If it is in the summer time she can do that herself. It will pay in the winter time to do it, and you have a little more time, and you can rub the udder for a few days on both sides. Do not draw the milk but rub the udder and you will develop it wonderfully.

The dropping of the first calf does not make a matured cow. She is still a heifer for a certain period, and during the first period of milking she must be carefully attended to. Every one of us who is in the dairy business wants

to have our cows milk a fairly long period, and we can help them a great deal by breeding, but we cannot do everything by breeding. We have got to do a little by feeding and by handling to develop this tendency in them for milking for a long period, and it must be done mostly during the first period of milking. Generally speaking, I would say milk the heifer during the first period for almost twelve months at any rate, and have her calve about two months later. The dairy cow is very largely a creature of habit, and if you give her the habit of milking for a long period the first time the chances are she will be a long milker afterwards. I believe the principal reason for the decrease in the size of dairy cattle throughout the country is the lack of feeding at that very critical time in their life.

MR. GLENDINNING: What effect has these young bulls on the decrease in size?

MR. DRUMMOND: I think that is a very serious question. I think that is a question that is open for a great deal of discussion. The excessive use of young sires is bound to have a very injurious effect. You see bulls brought into the ring three years old. Bulls from breeds that should weigh 1,500 pounds, and none of them weighing over 1,000 pounds. At one fair there were eight bulls in a class, and after we had explained the reason for giving the award a gentleman standing behind me who was interested in stock said, "Will you give us your opinion on that class of bulls?" I said, "Yes, if the exhibitors are willing." They were willing, and I had to be severe and I had to say that there was not a bull in the whole lot that I thought was fit to use to improve any herd. One of the exhibitors came up to me afterwards and said, "You are severe on our bulls. Can you tell me why my bull is so small? You will likely know the stock from which he comes." And I knew both the sire and the dam. The sire had been slaughtered about six months before, and weighed over 1,800 pounds, and the dam weighed between 1,100 and 1,200, and here was a bull three years old and only weighed 1,000 pounds. I said "How old was he when you bought him?" and he said "About six months," and I said "Did you feed him well?" and he said "Yes, I fed him pretty well and kept him in good condition, and he would be about fifteen months old in the spring." I asked him what he did with him, and he said, "I turned him out with forty cows." Now, gentlemen, there was the trouble. Any young bull turned into a pasture with forty cows would be ruined. He might as well serve 400 under control as to serve forty in the field, and what can you expect from a bull of that kind in improving stock. You should not use them until they are two years old, and you should keep them under your own control all the time, and keep them as long as they are good and vigorous, and are producing good stock.

GENERAL OBSERVATIONS ON THE DAIRY INDUSTRY IN DENMARK, WITH SPECIAL REFERENCE TO THE CO-OPERATIVE TESTING ASSOCIATIONS.

By C. F. WHITLEY, DAIRY DIVISION, DEPARTMENT OF AGRICULTURE, OTTAWA.

In a sense it is true that the economic problem of each country is unique, and must be worked out on national lines by the people themselves.

The Danes are our principal competitors in the British market. It is wisdom and good business to study our competitors and their methods; particularly our successful competitors. What is that has brought Germany to

the fore in the commercial world? Because years ago Germany realized what was wanted, and she sent her young men into every quarter of the world to find out what type of goods was wanted, and then she set herself to meet that demand, and so we find "Made in Germany" on merchandise the world over.

Denmark has made progress owing to her remarkable system of education, and the extent to which the principle of co-operation permeates everything in connection with agriculture. Private means and private enterprise almost exclusively in the last fifty years have founded a series of high schools and agricultural schools throughout Denmark, and there are in attendance now over six thousand young men and women between the ages of sixteen and thirty. What would be the result if we had six times the present number attending the Ontario Agricultural College?

In these Danish schools special attention is paid to the history and literature of the country. Particular attention is given to national songs and the folk lore of the country. This is their aim, first of all a love for country and a national feeling, and that is one of the distinguishing characteristics of the Danes; and along with that goes development of personal character.

Besides the regular dairy school, there are fourteen purely agricultural schools and twenty-nine of these high schools have agricultural courses attached. Mind you we are talking of a country of about the same population as Ontario, two and a half millions, while Ontario is thirteen times as large. They have forty-four schools where agriculture is available, and we have four or five in Ontario. It is no wonder that the Danes are spoken of as the best enlightened peasantry in the world.

The different classes of Danish society co-operate for educational purposes in a manner almost unknown and seldom equalled in any other country. In connection with the universities for instance there is a committee that publishes thousands of pamphlets on all kinds of scientific subjects which are sold for two cents, then the committee arranges to accompany excursions of farmers into the cities where they are personally conducted through museums, picture galleries and antiquarian collections. On these excursion days special plays are put on in the theatres free to the excursionists and they are good plays. They also have a system of giving cheap, and sometimes free, legal advice to the people from the country. All these and other organizations are maintained by university men, bringing the academical world into close relationship with all classes in the country, and establishing a sort of universal national union of vast influence in the national, social and intellectual progress of the country. In this great national work class distinctions are unknown. The highest men in the land are proud to associate with the humblest artisans and farm laborers in the consciousness that the outcome of such association will be to strengthen the intellectual energies of the nation, and elevate the true wealth producer's conception of the duties and responsibilities of citizenship.

Much of the success of Denmark is due to their system of co-operation. They have societies for almost everything in connection with agriculture, the improvement of horses, cattle, pigs and poultry, insurance of stock, the purchase of seeds, manures and agricultural implements and numerous others. All these societies are encouraged by the Government and some of them helped, but not to such a large extent as one would imagine. The Dane materially helps himself.

What are the prime conditions of successful co-operation? First of all, an intelligent people, which we certainly have here in Canada, and second, the land held in small or medium sized farms by the men who work the land

themselves. See the difference between the land held in that way and where it is held by absentee proprietors. Look at the turn over of agriculture in France. Before the revolution two-thirds of the land was held by the aristocracy and now two-thirds is held by the farmers themselves, and from being nearly the worst farmer in Europe the French farmer is now one of the best. Individual ownership is advisable. Give a man a rock and in a few years he will have a garden. Lease a man a garden, and in a few years we will have a wilderness.

This co-operation has converted Denmark from a poor country to one that exports to-day ninety million dollars worth of agricultural products, and that in the face of the fact that they import one million tons of grain, oil-cake, bran and so on. They have naturally a poor country agriculturally. It is considered a hungry, sandy soil, no sheltering hills and wind breaks. They have the cold German ocean on the one hand and the icy Baltic on the other. Fifty years ago the land was practically run out through continued wheat growing, and they had a degenerate type of cattle. In 1854, at the close of the disastrous Prussian war, they turned right around and went in for dairying. They have changed from primitive agriculture to higher and scientific methods of growing and utilizing crops, now they sell only the finest animal products. They rank second to Great Britain in wealth per head of population, but that hardly does justice to the wide-spread well-being in Denmark. In England there is a very small minority of very rich and a very heavy fringe of extremely poor, with a majority just getting a bare living wage, but that is not the case in Denmark.

The whole energy of the rural population is absorbed in the production of three essential commodities of the breakfast table—bacon, butter and eggs—and the tendency is not merely to increase the actual output, but to enhance the quality.

In 1887 they started the first co-operative packing establishment, and they now have twenty-seven. They have 1,160 co-operative creameries out of a total of 1,300, and these have all been started since 1882, when they only exported 29,000 hundred weight of butter, while now they export 2,000,000 hundred weight; and in the last ten years they have doubled their exports. If you look up our trade returns, you will find we sent to England about 12,800 tons of butter. That is about six per cent. of Great Britain's imports, but the little kingdom of Denmark sends seven times as much. Further, Canadian butter was only bringing from 95 to 96 shillings per hundred weight, while Denmark was selling for from 114 to 116 shillings, or a little over four cents a pound more. Canada sends only four and a half million dollars worth of butter, and the Englishman eats one hundred and one million dollars worth. If Canadian farmers will just wake up to the possibility of developing the dairy cow, so that she will produce more milk, and handle that milk so as to produce a uniform quality of butter, it will be a great thing for this Dominion.

Whence the secret of the supremacy and uniformity of Danish butter? First of all the care of the raw material from the moment of milking. The Danes pay great attention to the care of the milk, and careful attention to feeding the cows; they are groomed two or three times a week, and their health is carefully looked after. They are very cleanly about milking, and the milk is immediately cooled, and all dairy utensils are thoroughly cleaned. If a man sends milk to a factory in Denmark and the can comes in a bad condition, a label is pasted on the can stating "Clean this can;" "The cover needs cleaning," or "Cool the milk more carefully," and so on. Another point

they are particular about is the pasteurizing of the milk, and immediate cooling to eliminate any objectionable flavors and ensure keeping quality.

It is said that a great deal of the Danish butter is not just as good as it might be, both in grain and water content. They run, in many cases, close to the legal limit of sixteen per cent. of moisture. The butter is largely worked by hand and in some cases over-worked; but still they have the price and the reputation, and these are two things that we have not got, but that we must get.

Without enumerating all the various dairy associations, I just want to mention one to show how the true co-operative principle has extended. They have an association of creamery managers for the instruction of operatives in the latest requirements to give detailed information of the butter market, and to get the managers of the creameries in touch with one another, so that they can communicate any intelligence connected with the state of the market, in order that they may be prepared for all difficulties in connection with the making and marketing of the butter. This is rather a contrast to our system of selling. So perfect is what may be termed the "intelligence" side of their agricultural organization, that the operations of all forms of co-operative societies may be regarded as comprised in one vast federation, directed by the influential central committees discharging their varied functions with perfect harmony and mutual confidence.

I want to pass at once to the testing associations which they have organized most successfully. Previous to 1870 they had a breed of rather scrubby cattle. By careful selection and breeding they have entirely changed them, and now they have a breed of fixed type almost equal to the Ayrshires.

The dairy farmer there when buying cattle wants to know the actual performance of the mother, how many pounds of milk she gave per year, and what per cent. of butter fat it contained. He asks, "Is that bull well bred?" The answer is "Yes, his dam gave 9,000 pounds of four per cent. milk." That is their standard in every way. In judging a bull they take into consideration performance more than they do pedigree.

Something has been said here to-day about young and old bulls. In Denmark if a bull proves a profitable getter, he is not disposed of when two or three years old, but is retained until twelve or fifteen years of age. One that has proved his excellence is reserved for the best cows.

Their testing associations were started in 1895, a little over ten years ago. There are at the present time 9,000 farmers daily taking samples and weighing the milk from one hundred and sixty-five thousand cows, with the object of weeding out the poor ones. That is how the movement has spread there, and I believe it will spread as rapidly in Canada. They have increased the average production per cow in three years from thirty to fifty pounds of butter, in some cases it has gone as high as sixty-three pounds, and that is certainly worth working for here.

I have figures for seventy creameries with a total of nearly 60,000 cows that were giving an average of 5,500 pounds of milk. In six years they ran up to that average by eight hundred pounds of milk. Where can you get in one district in Ontario 50,000 cows that would average 6,300 pounds of milk? One association had nearly 40,000 cows that averaged 7,300 pounds, that included every animal on the farms, not simply those in good flow, but heifers, dry and farrow cows.

Will you digest these figures: Take the records last year of 1,172 herds. Over 780 averaged between 6,500 and 8,500 pounds of milk. We are not dealing with special individual show cows, but just the ordinary farmers'

cows sending milk to Danish creameries. Twenty-seven herds averaged 10,000 pounds, and five herds, not single cows, average over 11,000 pounds. If we would give our best attention to this matter, we could easily double our average in Ontario in five years, and there is no reason in the world why it should not be done. It just means a little time, care and attention.

We have six testing associations now organized in Ontario and Quebec, where the farmers have agreed to weigh the milk three times a month and take samples, and the Department of Agriculture will see that the testing is done for them; wherever twenty men in a locality will agree to do likewise, the Department will do the testing free. Speaking to a man this week in Quebec who keeps careful records, he told me that he thought he was doing well if he got \$50 from his cows, and he is perfectly sure his neighbors do not get \$25. The Danish farmer makes \$64 on the average for every cow he has, and there is no reason why the average return in Canada should not be as much, if the farmers will just make up their minds to the work. With our superb natural conditions and cheap feeding stuffs, there is practically no limit to profitable production.

J. A. RUDDICK, Dairy Commissioner for Canada, Ottawa: The past season has been, I think, the most prosperous year in the history of dairying in Canada and the prospects seem good for another such year. The fact is that Canadian dairy produce has made very good progress during the past six or eight months. There has never been a similar period, since we began the export of creamery butter, in which we made so much progress as we did last summer. There are several reasons for it, and I am not going into them just now. The great improvement in transportation and in the handling of the butter has effected a revolution in our shipments. You are not directly interested in butter making in this part of the country, but indirectly, you have an interest in it, because if it is successful it means that more milk will be turned in that direction and less made into cheese.

I think, on the whole, we made excellent progress last year in regard to cheese. I do not know that there was any marked improvement in the making of the cheese, but it has been handled in a better way. I am glad to tell you that last year, for the first time, there were proper facilities for receiving cheese at some of the ports on the other side, and that is where improvement is needed.

I am glad to find that this matter of the improvement of dairy herds is beginning to awaken considerable interest in the minds of the dairy farmers of Canada. I believe there are many farmers who will carry on this work themselves. Any person can procure an outfit for about three dollars, including the scales and bottles for holding samples. The cheese factories and creameries should take the matter up. We also have to consider the matter of breeding, feeding and selection. It will not do any good to simply weigh and test the milk; action of some kind must follow before we reap the full benefit from this line of work.

The CHAIRMAN: What are you going to do about it? You should go home and try to improve your business in every respect. This business is going to make or break Canada. I thank you for the assistance you have given me. I have had no trouble in getting good, profitable discussions on every paper, and it has been a pleasure for me to be here and to assist at these meetings. I thank you for the attention and order, and the way in which you have assisted me to discharge my duties.

Reports on Exhibits.

SHEEP.

By J. JACKSON, ABINGDON.

Upon the whole, the sheep exhibit was perhaps the best that has yet been at this Eastern Show, still there is room for improvement. Cotswolds were excellent in the lamb classes. Leicesters were an outstanding class in shearling wethers as well as in the lamb classes. Lincolns were fairly well represented, but not quite up to some former occasions. Oxfords made a good showing, some good specimens (not too well fitted) by local exhibitors. Shropshires were conspicuous by their absence. Last year they were the attraction of the sheep exhibit. Southdowns were especially good in quality, quite the best they have been at this show. Hampshires and Suffolks put up a good show, both in shearling wethers and lambs. Dorset Horns were well represented: some good ones were well fitted, and some good animals not so well fitted. Grades made a very good showing. On the whole the classes for shearling wethers were not well filled. To make this class an attractive feature of the show so late in the season there should be a dressed carcass class attached. It is not profitable to hold shearling wethers over so long.

In the pure-bred classes it would improve the show very much to have a class for pen of three ewe lambs. As an object lesson, breeders would then bring out their best. This can not be expected in the wether class when the best males are all required and bring high prices for breeding purposes.

In the Grade classes the wethers should receive special attention rather than the ewes. The wether lamb class might be divided into two classes, one class composed of lambs sired by short-wool rams, and the other of lambs sired by long-wool rams. Then I think the same rule in force at Guelph should be adopted, that is that all animals must be American bred. This would encourage local exhibitors, and the object lesson would carry more weight, showing what is being done in our own country. What one can do another can do also. Some effort should be made to stir up local competition. From what I know of the Ottawa Valley District there are the conditions, and the men, too, that could put up just as good a show of sheep as can be done in the Western part of the Province. Let them think so and make the effort. With better accommodation for holding the show, a place attractive to visitors, this show must be a success.

SWINE.

By WM. JONES, MT. ELGIN.

Tamworths.—The exhibit of Tamworths was not nearly so good as the Yorkshires, neither in numbers nor in the character of the exhibit. In fact, with the exception of a few sows in the female section, the whole exhibit was very poor, and not what it should be at an exhibition of this kind.

Yorkshires.—Barrow over six months and under nine months. The 1st prize went to an excellent barrow of up-to-date type and finish and plenty of size; 2nd was placed on a capital pig in every respect, quite equal to the first

prize barrow in every way only lacking a little in size: the 3rd prize went to a good useful kind, but with less finish than those preceding him; the 4th went to a long, smooth pig scarcely finished enough for his company. Barrow under six months: The 1st, a smooth well-balanced pig nicely finished throughout; 2nd, a pig of a trifle less length and not so smooth in shoulders; 3rd, a barrow well finished, but a little lacking in length of body for the company he was in. Sow over six months and under nine months: The 1st and 2nd prizes went to a pair of typical sows of medium size, excellent conformation and showing abundance of quality; 3rd and 4th went to sows of more size not showing so much quality. Sow under six months: 1st and 2nd went to a nice pair of sows of the right kind, well finished: 3rd went to a good sow but not so well finished as those placed higher in the awards.

Pure-Bred Bacon Hogs.—The exhibit of pure-bred bacon hogs at the Eastern Show was very good in both numbers and character of exhibit. For pen of three pure-bred bacon hogs no less than 13 different lots competed. First, an excellent trio of pure-bred Yorkshires of good type, plenty of length and excellent finish; 2nd, three pigs of very uniform type and finish, but possessing scarcely as much length as the first prize group. The 3rd prize went to a nice lot, but not so uniform as those placed higher in the awards. The 4th, a very nice lot, but a trifle under size; 5th, a very even lot of pigs showing less length of body than those preceding them in class.

Grade Bacon Hogs.—First, a trio of Yorkshire and Essex Grades that would be hard to beat anywhere, possessing as they did excellent type and almost perfect finish; 2nd, was placed on a lot of high-grade Yorkshires, a strong trio of the right type but not quite so uniform a lot as those preceding them. The 3rd to a nice trio of Yorkshire and Tamworth Grades, very even and uniform, but not so lengthy as those placed higher in the awards; the 4th was placed on a very nice lot, but of less scale and length of body than those preceding them.

POULTRY.

BY NEWTON COSH, PORT DOVER.

Black Spanish.—First cock, a magnificent specimen of true Spanish type and color, a splendid comb erect, and set firm upon the head; face of rare length and smoothness of texture; second, a bird above the average in quality but no match for the first. First hen, a nice large shaped one, with grand comb, and a face that would do credit to the average male bird. Second lost to first in length of face; her face and plumage were fresh and well preserved for this late season of the year; it was here only that she excelled the third. First cockerel, another real good one, color almost perfect, face nice and smooth with fairly good length, comb not standing quite erect but good otherwise. Second, a large, husky fellow with a nice straight, well shaped comb, losing in face color and plumage. First and second pullets much the same stamp as the first hen.

Black Minorcas.—First cock, a good one, had nice comb and lobes, one defective wattle, his color was almost perfect, good body, shape and tail carried at the proper angle, but somewhat broken; second had nice, clean head points, good color and true Minorca type and finish, but lacked size. Third, just a fair bird; fourth, good one, but was set back for down between toes. First hen, a real good one, shown in good condition; second, slightly better color, but lost on condition; third, lost on color. First cockerel had

grand color, strong in body and tail shape, comb well set upon the head, but contained too many spikes; second had grand comb and lobes and quite equal to first in shape and style, but bore evidence of passing through a mill whereby he got the small end of it, his wattles were marked up some and some of his wing feathers broken, if in condition would be hard to beat; third, a large, rangy fellow with good color and nice body shape, losing in tail and head points. The pullets were the most hotly contested class we had to handle, there being but little to choose between the five winners. First had slight advantage in shape and size; second had the best head gear and third a trifle the best color; fourth and fifth right close up with plenty of quality.

White Minorcas.—Rather a small class of fair quality.

Andalusians.—Were fairly well represented as to both quantity and quality. First cock had good color and style, but carried his tail too high; second, quite a nice one, but failed in color of flights. First and second hens had same fault. First cockerel, the star of the class, good in head points, nice style and grand color; second and third losing on color. First pullet had good average quality; second and third were of the English order, heavy black lacings, but were mossy and dirty in ground color and splashy in wing flights.

Buff Orpingtons.—Contained a class of nice, uniform quality. First cock showed considerable white in lobe, but was so far ahead of his class in other respects I was obliged to place him first, this fellow had plenty of size and good shape with good, sound, level color, sound undercolor and flights a little dark in tail; second failed on shape and uneven color in body and hackle, buff wings and tail; third, very similar. First hen, a fine, large shapely one with grand color; second, very similar in shape and size, but scarcely her equal in color; third, a nice one of correct type and strong surface color but lacked size. This was probably the only fault to first cockerel, not quite enough of him, other than this he was all Orpington; very low down with that much desired capital U shaped back and possessed that beautiful uniform golden buff color throughout; second was right after him with a shade more size, not quite as good in breast shape nor as even in color of surface; third and fourth, both good birds if their combs had been standing straight. First, second and third pullets all of the same type and color of first cockerel.

A. O. V. Orpingtons.—No cocks. First hen (white), rather small and of only ordinary quality. First cockerel (black), a nice shapely fellow with good color; second (white), plenty of size and fair shape, but a bit off on color; third, a fair bird in shape, but full of purple barring. First pullet (black), quite a nice all round specimen; second and third (white), of only fair quality.

French.—This class consisted of Creve Cours, La Fleche and Faverolles. The winners contained birds of the highest quality. *A. O. V.*—The honors here were divided between Sultans and Silkies loaded with quality.

The selling classes of Buff Orpingtons and Black Minorcas were well represented and good value could be found in both classes.

BY S. BUTTERFIELD, WINDSOR.

Light Brahmas.—A very fine class, cocks, 7; first, just about as good as our best Canadian; second, greatest fault was the weakness in tail color; third, same weakness. Hens, 18; first, really much the best hen in the class, looks as well or better than she did last year, grand and glossy in main tail

and grand rich tail coverts and fine in her white, a charming neck hackle; second, weak in tail and wing; third and fourth, too burdened with fat. They would look very much better if reduced one or two pounds each. Cockerels, 8; first, a really good bird all over, except being a little yellow in back, otherwise grand neck, hackle, and just about perfect in tail shape and color. Will, in condition, be very much in evidence at Toronto next fall. Second, just a fairly good bird, not as good as third cock. The greatest fault with the third cockerel was a poor comb. Pullets: First, an easy winner; second, a nice pullet, her greatest fault being very narrow across the skull, but she was fine in tail and tail coverts; third, a very good pullet, but lacks good tail finish. A very grand display was the light Brahma class, 40 light Brahmas at the show made quite a nice showing indeed.

Dark Brahmas.—First and second cocks were good birds. Hens, 5, and the winner was a really high class bird. Cockerels, 4, first a very good specimen and so was the second; third, just fair. Pullets, just a fairly good lot.

Cochins, Buff.—First cockerel quite a good stylish Cochin, an easy winner; second, only just a middling bird. Hens, 5. First an easy winner; second and third, grand and sound in color, but lacked good Cochin shape. Pullets, 4. First, an easy winner; second, a very good pullet; third, fairly good. Partridge, cockerels, first a very good bird, in great condition; second, great Cochin, but lacked the condition of first. Hens, 4. First, a grand hen (her greatest fault was shortness of feather); second, a larger and longer feathered bird, but not in so fine condition; third, just a fair hen. Cockerels, first, a fairly good bird; second and third, just about twenty years behind the day; too long on legs and too scant in leg and toe feathers. Blacks.—All through a good class, both in old birds and chicks. White.—Also a very good class, but chicks not as good as the old birds.

Langshans.—A very good class, both in old and young. Third cockerel carried his tail to one side or should have been first. Hens, 7, a good class. Cockerels, 6, first and second very good in shape, but they had one fault, carried their tails almost past perpendicular. In Asiatics, 137 birds made quite a grand showing, and all seemed well pleased to see such a large exhibit.

Barred Rocks.—A really grand class, and I think equal to our Western Ontario Show. Cocks, 8; first, a very nice comb and very finely barred in all sections. I learned after the awards were made he was five years old. He must have been a very good one to hold as good as he has done. Second, a grand shapely bird, very even in barring, but a little more open in barring, and comb not nearly as good as first; third, rather a plain comb and not so shapely, but certainly well barred down; fourth, coarser in barring, but shown in grand condition and very shapely. Hens, 10; first, very shapely and very bright in color, and well barred; second, a real good one in both color and barring, easily first if she had been in better condition, she was very light in weight; fourth has certainly been a good one, but age is beginning to make her back color greyish looking, a grand hen yet for a breeder; fifth, another good one, but not snappy enough in surface. Cockerels, 21; first, about one of the best I have seen this winter, very clean and clear on surface color, and well barred down, grand in comb and very stylish, a really good bird all round; second, another well finished bird, especially so about the tail; third, would have been second easily, but his tail was about all out; fourth, a very finely barred bird, just a little smoky on back; fifth, one of the nicest barred males in the show, but did not open so deeply barred as the

winners placed ahead. Pullets, 21, about the strongest competition in the whole show. First, grand and cleanly barred, her back finish was marvelous and the tail barrings almost perfect; second, much the same, but did not finish on surface, but a grand pullet; third, a lighter shade, but very clean, lacked finish in barring on surface; fourth, another good one, and fifth, another really bright, clean barred pullet, very blue in color, not so shapely or so good in leg color.

White Rocks.—Not so large in quantity, but enough good ones to make a grand show. Buffs: First cock, quite a good bird; second, fairly good. First hen, an easy winner, good shape and much the soundest color; second, a little uneven in color. Cockerels, a very fair lot. First pullet, in grand show shape, and a very evenly colored pullet; second, another very good bird; third, another very good bird.

Wyandottes.—Golden, only a small class of fairly good birds. First silver cock, a very shapely Wyandotte, and would be a much more taking bird if larger; second, larger, but lacked in cleanness of neck hackle and wing lacing. First hen, a very good one. First cockerel, a grand bird, with the very best of flights, and if a little cleaner in his white would be good in very high-class company; second, a nice shapely fellow, but not very good in flights; third, a nice bird, but his weakest place was his poor flights. Pullets, a grand class. First, just an easy winner, and one of the up-to-date silver Wyandotte females; second and third, a few years ago would be considered grand open-laced pullets. Buffs rather a small class of pretty good birds.

White Wyandottes.—Cocks; first, a large white bird, but stands rather awkwardly; second, in grand show shape, but looked very hard and close in feather; third, about the best in class, but sadly out of health, a white shapely bird when he feels all right. First and second hens, easy winners, good size, grand leg color, and very white; third, a nice shapely hen, but on the small side. Cockerels, 12; first, a very good stylish fellow, in the very pink of condition; second, another snow white bird, and close up to the first, first only beating him in having a little better comb; third, another good bird, and so were the fourth and fifth. Pullets, 15; first, a real gem, shown in the very best possible shape; second, a fine shapely pullet, and if she had been well washed would have made it quite interesting for first pullet; third, fourth and fifth all good high-class pullets. The White Wyandottes made a good class of birds.

A. O. U. Wyandottes contained some grand partridge cocks and hens, and same can be said of the blacks. First cockerel, a black, a real good one. Pullets, a good class.

BY L. G. JARVIS, MONTREAL, QUE.

Leghorns.—S. C. White, a large entry, and some extra fine birds shown. First cock, in the pink of condition, with face and lobes as clear as a cockerel, extra white in plumage, neat comb and nice carriage; second, also a good one, but comb a little large, with serrations a little wide, lobes not as good as first. Third, hardly as white in plumage as first or second, very stylish and in good condition. I rather liked one not placed, had he been in condition. First hen, a neat one, lots of style, neat comb and lobes; second crowded for first, but hardly as neat in comb shape, slightly pinched in tail. Third was also a good one, but failed a little in carriage, and a little short in leg. First cockerel, a good one and resembled first cock in shape of comb and body; neat comb, nice lobes, extra white in plumage; second, a little coarse in comb,

otherwise a very good one; third, a little upright in tail and heavy in comb. I noticed a great many fine birds in this class, fine stylish carriage, white in plumage, but combs of the Minorca type. First pullet, a little beauty, all Leghorn in shape, extra white in color, with fine colored legs but a trifle short; third, hardly as white in plumage.

S. C. Brown.—A large entry and a few extra good ones among the winners. I noticed a great many specimens in this variety with defective combs, too large, and more the type of Minorca than Leghorn. First cock, a little large in comb, yet well set on head, rich in color of plumage, fine legs and tail; second, not as good in striping of saddle or hackle, other points about equal; third, not as good in tail shape or as rich in plumage. First hen, nice comb, good lobes, fair in plumage; second and third, not as good in color, brickly on wings. First cockerel, a neat one, good comb and lobes, grand striping in both saddle and back, all Leghorn in shape; second, not as good in comb; fair color; third, lacked lustre of plumage. First and second pullets, extra good ones, good color, first winning in pencilling; third, not nearly as good in color.

Rose Comb varieties, not a large entry, a few good birds. *Blacks.*—A nice class, some of the winners with extra fine colored shanks and lustrous plumage. *Bufs.*—A nice entry, and some very nice birds among the winners. *Dorkings.*—Not a large entry in any variety, but some good ones in all varieties.

Polish.—A grand exhibit of all varieties. *W. C. B.*, first cock, a good one, grand crest, well set, with lustrous color of plumage; second, crowded hard for first, but hardly as good in crest shape or tail shape. First hen, a gem, as fresh in plumage as a pullet, grand crest; second, also a beauty, hardly as good in shape or size of crest. First cockerel, a stylish bird with rich plumage, and great crest; second, well up in most sections, hardly equal to first in shape of body or carriage of tail. Winning pullets all good.

Silver Bearded.—A grand lot and competition keen in cockerels, an unplaced one, to all appearance, without handling, would have been an easy winner; a grand crest, extra lacing on breast and wings, but failed in back shape, and slightly wry in shape.

In *Buff Laced*, I have noticed that competition is getting keener, and this variety is now having as many admirers as the other and older varieties. The specimens we meet with now at our exhibitions show that lustrous mellow buff, with that distinct lacing, as distinct as a Sebright, with crests richer in color. The Polish class may be considered among the ornamental classes of pure-bred poultry, yet we find them excellent layers, and very hardy, and they are a great addition to the attractions of a poultry exhibition.

Hamburgs, some grand birds in all varieties shown. I noticed several, however, out of condition, or that seemed to be a little overshadowed. I think in Golden Spangles we do not find as many good ones as we did a few years ago, but we find this in other varieties of fowl. For a few years there is, or there seems to be, less interest taken in some variety and more attention paid to other varieties, and then in a short time we find them well represented again at our exhibitions, with as many admirers as before. I hope, in fact I know, this will be the case with this beautiful variety of Hamburgs.

Red Caps.—Not a large exhibit, and most of the birds had the appearance of being a little overshadowed. Probably there is no other variety of fowl that will show the effects of over showing or the effects of close confinement

as quickly as the Red Caps, owing to the fact of the shape of combs being quite different in type from all other standard bred fowl. Close confinement to the show room or rooms excessively warm makes their combs grow with a tendency to fall to the front, thus obstructing their sight to a certain extent. I never feel like exacting all the standard requirements and give the benefit of a doubt to extra fine specimens, even if the comb does slightly obstruct the eye. I would not feel justified in doing this at an early exhibition, knowing that the birds had not been cooped up before at any previous exhibition. We intend, as nearly as possible, to carry out the intentions of the standard to the best of our judgment, but there are cases probably where we may have to be a little generous and no split straws over defects, knowing the cause that made the defect. We find also at some exhibitions, where they are held late in the season, absence of or broken feathers. We have to use our judgment in such matters as we think will be justifiable, and yet keep within the meaning of the standard as nearly as possible.

Houdans.—A very nice entry and some extra fine specimens shown. The distinction of the mottling, particularly in the females, extra nice, with lustrous plumage. I find the exhibitors of this variety are breeding of late years to get a more distinct mottling and to have both colors distinct in all sections. This was very noticeable at this exhibition, where we handled some specimens as nearly perfect as could be in this particular; also they are keeping up the size of their stock in their endeavor to obtain that richness of plumage.

Javas.—Some extra fine black and mottled shown, not a large entry, but some birds with grand plumage were shown in both varieties.

Rhode Island Reds.—A small entry, both rose and single comb competed in same class. There seems as yet a great difference in color of the varieties shown in this class, yet we look to see in the near future a settled fact as to their proper color, or the breeding to the standard, as to color and shape, as now required.

Turkeys.—A very nice exhibit. First, bronze gobbler, old, grand in color, could hardly fault him, excepting a little weakness in color, or barring in primary. Other specimens winning in this class also good, both in old and young. White Holland.—A fair exhibit. A. O. V. class.—A few Narragansett shown, and one or two slate; very good ones.

Geese.—Toulouse.—Extra fine, in grand condition; the same can be said of the Embden. A. O. V.—A few good African. China.—Two pairs of white; fair.

Ducks.—Rouen.—A few of the winners were extra good; females showing rich plumage and fine lacing. Males, only one or two that were really good; first young drake, a nice one. Cayuga.—A nice exhibit; a few with grand plumage, good size, nice beaks and legs. A. O. V.—Indian Runner, Muscovy and Mandarin shown; a very nice pair of Indian Runners shown in the young class won easily, as they were the nearest to standard qualification. Pekins.—Not as large an entry as we would like to see of this grand variety of ducks, now probably the most popular of all varieties. A few good ones, but on the whole not of extra quality. Aylesbury.—A very small entry, nothing worthy of special mention.

FINANCIAL STATEMENT OF THE EASTERN ONTARIO LIVE STOCK AND
POULTRY SHOW FOR THE YEAR ENDING DECEMBER 31, 1905.

Receipts.

To cash on hand	\$1,252 66
" Legislative Grant	3,500 00
" advertising in prize list ...	90 00
" City of Ottawa Grant	300 00
" advertising privileges at show	20 00
" gate receipts	374 05
" entry fees	712 15
" prizes paid by Poultry As- sociation	1,379 00
" prizes paid by Seed Grow- ers' Association	68 00
" prizes paid by Holstein- Friesian Association	55 00
" refund from C. P. Ry.	8 21
" interest from bank	17 50

\$7,776 57

Expenditures.

By Directors' expenses	\$105 57
" Secretary's salary	300 00
" postage and stationery ...	114 17
" printing and advertising...	466 30
" typewriting, office help and expenses at show	363 21
" telegraph, telephone, ex- press and cartage	27 28
" judges and lectures	190 15
" fitting building	988 55
" superintendent and assist- ants	301 75
" refunds on freight of ex- hibits	136 86
" cash paid for prizes	3,311 75
" entry fees credited to Poul- try Association	466 90
" refunds on entry fees	17 25
" reporting meetings	50 00
" insurance on coops	5 70
" auctioneer for sale of car- casses	5 00
" heating buildings	56 25
" lighting building	22 50
" straw	43 06
" freight and repairs on coops	36 12
" accommodations for exhibi- tors	7 80

Total \$7,016 17

Balance cash on hand 760 40

Examined and found correct, this 30th
day of January, 1906.
(signed) J. M. DUFF, Auditor.

J. C. SMITH, President,
A. P. WESTERVELT, Sec.-Treas.

Reports of Local Poultry Associations.

The following reports have been prepared from information supplied by the various local Poultry Associations:

Waterloo County Poultry and Pet Stock Association.—This Association was formerly the Berlin Poultry and Pet Stock Association, and was organized in 1902. Four winter shows have been held. The membership is about 40. The receipts in 1905, \$255; expenditure, \$235. Meetings are held monthly and it is intended in future that at all these meetings birds will be shown. The number of entries at the last show was 320; entry fees, \$80; gate receipts, \$80. The officers are—President, J. Hallman; Vice-President, H. J. Hurd; Secretary, J. A. Good, Berlin.

The Owen Sound Poultry and Pet Stock Association.—This Association was organized during the year 1882. The first show was held in the winter of 1883-84, and a show has been held every winter since, the 23rd annual show being held January 8th to 12th, 1906. The average active membership has been 25. The membership for 1905-6 is 28.

FINANCIAL STATEMENT OF THE LAST SHOW.

<i>Receipts.</i>		<i>Expenditure.</i>	
Cash donations	\$123 00	Folding coops and drinking cups	\$ 40 80
Membership fees at \$1 each...	28 00	Judges fees and expenses	64 50
Memberships for special admissions (\$1)	190 00	Advertising	16 90
Entry fees at 25 cents each ...	153 50	Feed for birds during show.....	11 17
Gate receipts, 10 cents admission	80 30	Prize money paid	238 50
		Other general expenses	142 93
		Cash on hand	60 00
	\$574 80		\$574 80

At the last show there were about 650 birds on exhibition. The judge engaged was Mr. I. K. Felch, of Natick, Mass., U.S.A., but on account of illness he sent Mr. D. E. Tasker, of Battleborough, Vt., to officiate. The judging is always done by the score card system. Two Canadian judges have been engaged for the show January 14th to 18th, 1907. The officers are: President, John K. Leslie; 1st Vice-President, Harry Mosley; 2nd Vice-President, Dr. G. J. Somerville; Treasurer, Chas. Pratt; Secretary, Robert R. Cameron.

Midland, Poultry, Pigeon and Pet Stock Association, was organized in July, 1904. The following February the first show was held with 310 entries. The prizes paid amounted to \$200. The membership for the first year was 75, present membership, 125. Liberal donations were given by merchants and other citizens. The judge was J. True, of Lindsay. In 1905 there was an entry of 528, exhibits being forwarded from considerable distance. The receipts and expenditures balanced at \$390. Gate receipts amounted to \$40, smaller than they would have been had it not been for the very severe weather during the time of the show. The report states that the special work of the show is to encourage the breeding of pure-bred poultry, both for show and for utility purposes. Cash prizes of \$2 were given for all

the leading varieties of fowls, shown in pairs. Special prizes were also offered. The judge at the last show was Jos. Bennett, Toronto. The officers for 1905-6 are: President, J. W. Benson; Vice-President, G. C. Bawden; Secretary-Treasurer, H. E. McCartney.

The Guelph Poultry Association, was organized in 1890. The average membership for the past five years is 70; membership for 1905 was 71. The total receipts in 1905, \$105.20; expenditure, \$103.50. Besides this, there was offered in special prizes in the Poultry Department of the Winter Fair at Guelph, \$176 in cash and \$69 in goods. During the winter months, judging classes are held, members supplying the exhibits. Different varieties are used for each meeting. An experienced breeder is selected as judge. The awards are not placed, however, until each person present has an opportunity to examine the birds and place them in order of merit according to his judgment. After this is done the judge gives his decision and explains his reasons for placing the awards. No cash prizes are offered, the prizes consisting of ribbons. On account of the Winter Fair being held in Guelph, the Association does not attempt to hold a show during the winter months. The Association, however, works with the Central Fair Board in conducting the Poultry Department of the fall fair. At this exhibition there is an average entry of about 800. The entry fee is 20 cents. The officers of this Association for 1906 are: President, W. McMaster; 1st Vice-President, A. Readwin; 2nd Vice-President, G. A. Black; 3rd Vice-President, F. W. Krouse; Treasurer, Geo. Poole; Secretary, W. H. Fairley.

Hamilton and Wentworth Poultry Association.—This Association was organized in 1887. The average annual membership is 30. The membership for 1905 is 36. The receipts for 1905 are \$550; expenditure, \$625. An annual show is held the last week in November. The entries for 1905 were 1,080. The fee for entry is 25 cents per bird. The gate receipts were \$56.95. The judges were Sharpe Butterfield and Chas. Wagner. The officers for 1906 are: President, G. G. Henderson; 1st Vice-President, Geo. J. White; 2nd Vice-President, D. Urquhart; Secretary, John E. Peart.

Brockville District Poultry and Pet Stock Association.—The Association was organized in 1905. At the time the report was sent in there were 27 members for 1906. New members, however, were joining at each meeting. The membership for 1905 was 58. The receipts were \$29, and the expenditure \$19.25. A meeting is held the third Friday of every month in a room supplied free by the town. Three public meetings were also held at which representatives of the Ontario Department of Agriculture, and the Experimental Farm, Ottawa, were present. At one of the meetings there was also present an expert on plucking and dressing chickens. At the Brockville Fall Fair the number of entries in the Poultry Department has been increased from less than 100 to over 600. The quality of the exhibits is also much better than it was previously. The officers for 1906 are: President, J. E. Fidler, Brockville; Vice-President, Gornon Manhard, Brockville; Secretary, W. M. Osborne, Brockville; Treasurer, W. P. Carswell, Brockville.

Napanee Poultry, Pigeon and Pet Stock Association.—This Association was organized October 6th, 1905, the object of the Association being to encourage the poultry industry throughout the county. Two meetings are held each month for the purpose of conducting the business of the Associa-

tion and giving illustrated addresses and discussions on fowls. Besides these meetings public meetings are held in the Town Hall to which every person interested in poultry is invited. The first annual winter show was held in January, 1906. The judge was L. G. Jarvis, Montreal. The results were very satisfactory, there being about 400 entries. The next annual show will be held from the 9th to 11th of January, 1907. The officers of the Association are: President, Herman Meng; 1st Vice-President, C. A. Stacy; 2nd Vice-President, Geo. E. DeGroff; Secy.-Treas., Geo. T. Walters; Chairman of Executive, F. Chinneck.

Toronto Poultry, Pigeon and Pet Stock Association.—The date of organization of this Association was 1869. The average annual membership for the past ten years, 70. The membership for 1905 was 89. The total financial receipts for 1905 were \$52.57; expenditures, \$48.65. Monthly meetings are held and four different varieties of fowls are usually used at each meeting. These are scored and challenge medals are offered for the best bird in each class. Addresses are delivered by experts on practical subjects relating to poultry. At the last show there were about 620 entries. The entry fee was 25 cents, altogether about \$155. The gate receipts amounted to about \$70, the admission fee being 10 cents. The judges were Jos. E. Bennett and E. P. Spry and W. F. Wolfe. The officers are: Hon. President, John Chambers; President, Wm. Moebus; Vice-President, Jos. Bennett; 2nd Vice-President, Jos. E. Fullarton; Secretary, Chester E. Sherlock.

Brantford Poultry Association.—This Association was organized in March, 1895. The average annual membership is 75. The membership for 1905, 88. The total receipts, \$675.55; expenses, \$548.20. An annual poultry show is held, pigeons and pet stock are not included. Monthly meetings are held at which matters relating to the poultry industry are discussed. At the last show there was an entry of 690 birds, which were judged by Wm. McNeil of London. The entry fees and membership fees amounted to \$260.55; gate receipts, \$90; private subscriptions, \$325. The officers are: President, J. H. Minshall; Vice-President, S. C. Shelby; Secretary, P. H. McNelles.

Huron Poultry Association.—The exhibition of 1905 was the 10th annual show. There were 85 members in that year. The expenses slightly exceeded the receipts, and in order to make up the deficit the Seaforth exhibitors were only paid 90 per cent. of the prize money won by them. Special attention has been paid to the exhibit of dressed poultry and eggs. In 1905 the number of entries was 576, the entry fee being 25 cents per entry. The judge at the show was Jos. E. Bennett, Toronto. The officers of the Association are: President, J. G. Scott, M.D.; Vice-President, P. Dill; Secretary, J. F. Daly.

Northern Ontario Poultry Association.—This Association was organized in 1904. The membership for 1905 was 65. The receipts were \$65; expenditure, \$65. A poultry show is held in connection with the Agricultural Fair which is held at the time of year when the birds are not in best condition for showing. Monthly meetings are held under the auspices of the Association. The officers are: Hon. President, Jos. F. King, Pt. Arthur; President, R. E. Mitchell, Pt. Arthur; 1st Vice-President, E. Dyke, Fort William; 2nd Vice-President, J. Stephenson, Murillo; Secretary, D. Bell, Pt. Arthur.

ture, \$13.65. The object of the club is stated to be: (a) To improve the different varieties of turkeys and waterfowl. (b) To urge the adoption of the true type and color by breeders, exhibitors and judges. (c) To promote the breeding of turkeys and waterfowl. (d) To designate dishonest breeders. (e) To advance the interests of the breeds generally. No show is held, but special prizes are offered by members of the club at the Winter Fair, Guelph. The officers are: President, Allan Bogue, Woodbank; Vice-President, I. T. Knight, Guelph; Secretary, W. J. Bell, Angus.

Canadian White Plymouth Rock Club.—The club was organized in 1903. The membership for 1905 was 42. The average annual membership, 40. The total receipts \$67; expenditure, \$60. The object of the club is to encourage the exhibition of the finest specimens of this variety at the large shows. Special cash prizes were offered at the Winter Fair at Guelph, and a silver cup at the Canadian National Exhibition. Short articles are also supplied the poultry papers setting forth the merits of the White Plymouth Rock both for eggs and meat production. The officers are: President, W. H. Bessey, Coleman; Vice-President, P. Dill, Seaforth; Secretary, H. H. Wallace, London.

Canadian White Wyandotte Club.—The club was organized in 1902. Membership, 89. Total receipts for 1905, \$76.38. Expenditure, \$45.75. The object of the club is the advancement of the White Wyandotte as to color, style and type, thus conforming to the standard of perfection. Special prizes are offered at the different poultry exhibitions. The number and quality of the White Wyandottes at the last "Ontario" show the result of the work of this club. The club has during the present year issued a very handsome catalogue setting forth the qualities of the White Wyandotte. This catalogue is for free distribution and copy will be sent upon application to the Secretary. This season special prizes are being offered at every poultry exhibition in Canada (whose Secretary applies for same). The prizes consist of a beautiful silk badge for the best cock, best hen, best cockerel, best pullet and best pen. (Open to members of Canadian White Wyandotte Club only). List of members will be furnished to each Secretary. At the coming National Exhibition, Toronto, cash prizes will be offered, amounting to \$20.00; also a handsome silver challenge cup. To the Eastern Ontario Poultry Show at Ottawa the club has donated a silver cup. Special cash and other prizes will be offered at the Ontario at Guelph. The officers are: President, L. H. Baldwin, Deer Park; Vice-President, John S. Martin, Port Dover; Secretary-Treasurer, J. F. Daly, Seaforth.

Canadian Horse Breeders' Association.

ANNUAL MEETING.

The twelfth annual meeting of the Canadian Horse Breeders' Association was held at the Repository, Toronto, on February 9th, 1906, at 8 p.m. The President, Dr. Andrew Smith, who occupied the chair, called the meeting to order, and requested the Secretary to read the minutes of the last annual meeting.

ALDERMAN SHEPPARD moved, seconded by Mr. J. J. Dixon, that as the minutes were printed, that they be taken as read and adopted. Carried.

FINANCIAL STATEMENT OF THE HORSE BREEDERS' ASSOCIATION

FOR THE YEAR ENDING DECEMBER 31st, 1905.

Receipts.

Balance on hand from 1904.....	\$4,763 81
Grant from Ontario Government	2,000 00
Balance of profits from Horse Show, 1903	100 00
Profit from Horse Show, 1905...	1,918 79
Cash for King Edward prize...	50 00
Fees 90 members at \$1.00.....	90 00
Interest on deposits	125 73

\$9,048 33

Expenditure.

Banquet and attendant expenses	\$ 271 50
Auditor and Stenographer ...	29 75
Clydesdale and Shire Show ...	1,000 00
Canadian Horse Show	1,750 00
King Edward prize Horse Show	50 00
Open Air Horse Show	200 00
National Exhibition, Toronto..	25 00
Committee expenses	68 75
Stationery and publications ...	28 45
Printing	29 00
Postage	33 25
Balance	5,562 63.

\$9,048 33

H. WADE,
Secretary-Treasurer.

TORONTO, January 31st, 1906.

The above statement is correct and in accordance with the vouchers submitted to me.

G. DE W. GREEN,
Auditor.

SECRETARY'S REPORT.

The SECRETARY read the 12th annual report and financial statement of the Canadian Horse Breeders' Association as follows:

It is gratifying to be able to say with assurance that despite the automobiles, bicycles, trolleys, electricity, steam-power and all other forms that methods of transit take, the horse industry was never more prosperous than it is now and has been during the past year. This is attributable to various causes, one, the opening up of our own country and the vast schemes of construction and settlement that are in progress, and the other to the demands of the other countries in consequence not alone of advancement and greater

activity but also of war and of devastation. It is regrettable to say, however, that our shipments abroad have grown less and less, until at present they are at the lowest tide in our history. This, however, does not furnish so substantial a cause for complaint as would at first appear, as our own home market is too brisk and lively to permit of a surplus for export. In other words, farmers and breeders are getting as much proportionately at their own doors as they could from foreign purchasers. This state of things indicating as it does great prosperity, is surely something to congratulate ourselves upon.

You will be further pleased to hear that reports from all our affiliated societies are most encouraging, each and every one showing an increase in membership, and a corresponding increase of revenue. The removal of the various registrations to Ottawa, which has been successfully accomplished, has quickened the lives of the various societies, instead of, as was once feared, lessening their interest and influence.

The lack of a large building in which horse shows and other functions requiring considerable floor space, in this the capital and largest and most important city of the Province, continues to be felt. Although the military authorities were induced, after the manifestations of much reluctance, to permit the use of the Armouries for this year's Horse Show, they said definitely that it was the last time such consent would be given, owing to the interruption of the spring drills that it involved, and to the fact that it was considered a misuse of the structure, which it was never intended should be used for other than military purposes.

While it cannot be said that our representatives and members have achieved phenomenal success abroad during the past year, they have on the whole more than held their own, and at New York, Chicago and other places have in some instances come out ahead against the fiercest competition.

Horse shows continue to grow in influence and number, not only in the Province of Ontario but all over Canada, while more attention is being paid to the breeding interests at the many agricultural and industrial shows. During the year most successful shows were held at Toronto, Montreal, Ottawa, Halifax, Quebec, Galt, Stratford, London, Guelph and other places. In this connection it is worth while directing attention to the open air horse show and parade which has become an annual fixture in Toronto, and to which your Association contributed \$200 last year in recognition of its value as a work of humanity, as an aid in the development of the horse industry, and as an auxiliary to the shows that are more directly concerned and connected with the breeding interests.

At all the meetings held during the week an important and prominent subject discussed has been the nature of the recommendation that should be made to the Government as the best way to afford systematic encouragement to the interests you represent. Their various determinations are before you, and as the central body you will perhaps determine to further confirm their views or to advance some of your own.

Your Secretary would like to direct attention to the wonderful improvement that has taken place during the past year in the market for ponies, almost fabulous prices have been paid in New York and Chicago. In Canada the Canadian Pony Society has been doing a splendid work, and its efforts are being rewarded in the most practical way by better recognition than formerly at the different shows, by increased commercial values and by the market development in public attention.

In conclusion, you will be pleased to hear that if our aggregate exports have decreased, our receipts for breeding purposes have largely increased, a notable instance being furnished in the fact that the number of Clydesdales imported in 1905 was more than double the number brought in in 1904. The same story has to be told of the Shires, Hackneys, and the lighter types. In passing, it should be mentioned that while, as has been said, the total exports show a regrettable falling off, the sale of pure-bred Clydesdales from Canada to the North-west and United States excelled all previous records.

I may also mention that before long new records of horses will be started in Ottawa, viz., for Thoroughbred horses and Standard bred horses. A Thoroughbred Association has been organized, provisional officers have been written to, and a meeting will be held shortly to complete the organization. A Standard-bred Association will also soon be found. All of which is respectively submitted.

H. WADE.
Secretary-Treasurer.

The PRESIDENT: Mr. Wade has read us an excellent and very satisfactory report, and you have also heard the financial statement, and taking all in all the Canadian Horse Breeders' Association is in a fair condition. During the past year there has been a great advance in the horse interests in this country; and as Mr. Wade has pointed out in his report there have not been so many horses exported to England as in former years because there is a better market here and in the North West, and a market which is likely to continue for a good many years to come. That is also gratifying. A great many people are importing many excellent horses, particularly the heavy draught, showing what private enterprise can do; and the Show that has just closed to-day shows what can be done with a little organization and a very little perseverance. When the Clydesdale Horse Show was begun three years ago the success was not thought so very much of, and the attendance was comparatively small; but look at the attendance we have had during the past three days. I believe even if we had a larger place, although the place for showing is excellent as regards this meeting and everything else, the attendance would have been double what it is. Therefore, I will not detain you any longer, but I will ask that this report be received and adopted.

On motion of Mr. THOMAS GRAHAM, seconded by Mr. GEORGE PEPPER, the report was adopted.

Mr. GEO. PEPPER stated that the Association had been trying to get the Minister of Agriculture to do something for the encouragement of the breeding of horses, and something in the way of licensing and inspecting stallions and giving larger grants to the horse interests. The Association had appointed a deputation to meet him, and at that deputation the Minister had said that he wanted them to go back to the different horse breeding societies, have them discuss them thoroughly, and send up to him recommendations as to what they desired done. As a member of that Committee, he thought it was the duty of the President or Chairman or Secretary to see that that was done at the different annual meetings of the Association; but that although he had attended them all he had not heard it spoken of.

COL. MCGILLIVRAY thought they were all more or less to blame. He did not know whose duty it was to officially bring it before the different Associations. He was free to admit that as a member of the Committee he had forgotten about it, but he thought that they could cure the difficulty now; this Association being a representation from all the horse breeders, he thought

Mr. Pepper's objection could be made by taking the action to-night; and by getting an expression of opinion from this meeting it would be an expression to the Minister of Agriculture as to what the various Associations wanted.

Mr. PEPPER stated that the Minister had said that he wanted an expression of opinion from every individual society, and therefore what Col. McGillivray suggested could not be done at this meeting.

Mr. GOOD stated that he had brought the matter before the Harness, Hunter and Saddle Horse Society, and delegates were appointed to represent that Society. He stated that Mr. Pepper was absolutely right in his statement that the Minister requested that the matter should be brought before each of the Societies, but it had not been brought so far as he knew before a single society except the Harness, Hunter and Saddle Horse Society.

The SECRETARY stated that there had been a meeting held of the delegates appointed by the different societies, and they had waited upon the Minister of Agriculture and explained what they wanted.

The PRESIDENT read a letter which he had received from the Minister of Agriculture as follows:

TORONTO, February 1st, 1906.

To the President of the Dominion Horse Breeders' Association:

DEAR SIR,—Arrangements are being made to form an Advisory Board for live stock for the Province, the representatives from the Live Stock Associations being appointed as follows:

Heavy Horses.—Two members elected by the Directors for Clydesdales and Shires on the Board of Directors of the Canadian Horse Breeders' Association.

Light Horses.—Two members elected by the Directors for Light horses on the Board of Directors of the Canadian Horse Breeders' Association.

It is hoped that this action of the Department will meet with the approval and hearty support of the members of the various Live Stock Associations, and that experience will prove the wisdom of the decision of the Department in adopting this method of giving recognition to their associations.

Will you kindly arrange to have a meeting of the Directors of your Association at the close of your annual meeting, to appoint the representatives from your Association in accordance with this letter.

Yours very truly,

(Sgd.) NELSON MONTEITH,

Minister of Agriculture.

The SECRETARY read the following list of Directors appointed by the different Associations to the Canadian Horse Breeders' Association:

Thoroughbred Association: Dr. ANDREW SMITH, and WM. HENDRIE, Jr., Hamilton.

Harness, Hunter and Saddle Society: Mr. J. J. DIXON and Alderman O. B. SHEPPARD, Toronto.

Hackney Horse Society: THOMAS A. GRAHAM, Claremont, and E. C. H. TISDALE, Beaverton.

Trotting and Pacing Horse Association: ALD. SAMUEL MCBRIDE and Mr. GEORGE PEPPER, Toronto.

Clydesdale Horse Association: WILLIAM SMITH, Columbus, and JOHN BRIGHT, Myrtle.

Shire Horse Association: J. M. GARDHOUSE, Weston, and W. E. WELLINGTON, Toronto.

Canadian Pony Society: W. J. STARK and Dr. J. O. ORR, Toronto.

Open Air Horse Parade: NOEL MARSHALL and J. APPLGATH, Toronto.

On motion of Mr. GEORGE PEPPER, seconded by Dr. W. A. YOUNG, it was resolved that the above representatives from the different Associations constitute the directorate of this Association for 1906, and that the Secretary be instructed to cast the ballot. Carried.

DELEGATES TO EXHIBITIONS.

National Exhibition, Toronto: Mr. THOMAS GRAHAM, Claremont.

Western Fair, London: O. SORBY, Guelph, and WILLIAM MOSSOP, St. Mary's.

Canada Central, Ottawa: JOHN BRIGHT, Myrtle, and PETER CHRISTIE, Manchester.

The SECRETARY read a letter from Mr. Good, Secretary of the Open Air Association, extending thanks for the grant of \$200 for prizes, and requesting a renewal of the same.

Mr. NOEL MARSHALL stated that as President of the Open Air Horse Parade he desired to back up the letter written by the Secretary. He stated that they had no source of revenue other than they received from the city of Toronto, from the Horse Breeders' Association, and from personal subscription. He trusted the gentlemen present would vote for a renewal of the amount to be given to them.

Dr. YOUNG as treasurer of the Open Air Horse Parade expressed the thanks of the Board for the very kind treatment given last year. He thought there was very little doubt but that the show was accomplishing a very great deal of good.

Dr. ORR moved, seconded by Mr. BRIGHT, that the correspondence with reference to grants be sent to the Board of Directors for consideration, and action be taken by them in apportioning the grants to the different exhibitions and shows.

Mr. PEPPER thought that the granting of the funds of the Association was something which might well be discussed in open meeting, and he thought it should be settled here. He moved, seconded by Dr. YOUNG, that this Association make a grant of \$200 this year to the Open Air Horse Parade, which was undoubtedly one of the greatest successes they had ever had in Toronto.

The PRESIDENT put the motion, which on a vote having been taken, was declared carried.

Dr. ORR stated that his object in moving as he did was that he thought more good would accrue to the Association; that the object of the grants was that of doing some good in the breeding of horses. He thought that questions of grants should be considered by the Board of Directors, and, if necessary, another meeting of this Association called. After some little discussion, Dr. ORR, with the consent of his seconder, withdrew his motion.

Mr. PEPPER moved, seconded by J. M. GARDHOUSE, that this Association confirm the promise of the grant already made of \$1,750 to the Spring Horse Show. Carried.

Mr. ROBINSON moved, seconded by Mr. HENDERSON, that \$1,000 be granted to the next Spring Stallion Show, provided the show was held.

Mr. CHRISTIE thought that this was a matter that should be left to the Directors; that their hands should not be tied down to \$1,000.

Mr. BRIGHT moved in amendment, seconded by Dr. ORR, that the matter of further grants be left to the Board of Directors to settle.

Mr. PEPPER said that if Dr. Orr had been present at as many of these meetings as some of the members had been, he would know that Mr. Bright's amendment was a convenient way of shelving the matter.

Dr. ORR disagreed with this view. He thought the Directors were not trifling with the horse interests; but by passing a resolution of this kind the Board were tied down to a certain amount, and they could not give any more, and he thought there should be some little latitude given to the Directors.

The PRESIDENT stated that he was perfectly in accord with the views expressed by Mr. Christie and Dr. Orr. He thought the stallion show had done a great deal in the past three years, and it was going to do a great deal more in the future, and he thought they could give a larger grant than \$1,000.

Mr. GOOD was opposed to the giving of a larger grant, as it seemed that the members present had the idea that the amount on hand of \$5,000 was going to last forever. He thought they should bear in mind that a grant of \$2,000 was being received from the Ontario Government. He also thought they should go farther afield and seek aid from other sources.

Mr. HENDERSON stated that the Clydesdale Association alone had put up \$500.

Mr. CHRISTIE expressed the opinion that the Government were not going to shut their eyes to the interests of the horse breeders of Canada or withdraw the grant. He was satisfied they were prepared to assist, perhaps better in the future than ever before, and the Government desired all the suggestions they could receive. He did not desire to tie down this Association to \$1,000. He thought every horse breeder present could see that there was necessity for the granting of a larger sum of money in order that they might have a larger show. He was perfectly satisfied to leave the matter in the hands of the Executive of the Association as to what the amount should be.

Mr. GRAHAM thought that the constitution ought to cover the matter. The moneys which were received from the Government or wherever they might come from were placed in the hands of the Directors to be dealt with, which he thought was a wise provision.

Mr. GOOD expressed the opinion that if \$1,000 was granted by this Association, and the Directors subsequently saw fit to increase that amount by \$250 or \$500 he was certain the next annual meeting would ratify their action.

The PRESIDENT put Mr. Bright's amendment, which, on a vote having been taken, was declared carried.

On motion of Mr. J. D. MONTGOMERY, seconded by Dr. YOUNG, Mr. Pepper addressed the meeting on the subject of the building of an arena for show purposes. Mr. Pepper went fully into the question of building an arena, and outlined the various sources of revenue which could be realized from the source of such a building and estimating that the amount would be about \$47,500 with disbursements estimated at about \$19,000. What we want, he said, is a united effort, an effort that will keep at this thing, and keep pushing at this wheel until we get the ground, and when that is secured

I will guarantee to raise the money to build the building. We want the unanimous endorsement of this meeting in addition to its help. If we appoint a delegation, we want them to come back and report to the Committee and thus keep the thing alive until we get a horse show that is worthy to be called a National Horse Show. Mr. Pepper then moved, seconded by Mr. Tomlin, that the following gentlemen be a Committee to confer with a like Committee from the Hunt Club and the city as to the best means of securing an arena or a building suitable for horse show and other large shows, and that they be empowered to invest our funds in the stock of such a building as they see fit: MESSRS. THOMAS GRAHAM, DR. SMITH, N. MARSHALL, J. J. DIXON, J. MCGILLIVRAY, G. PEPPER, O. B. SHEPPARD, ALD. MCBRIDE, ARTHUR JOHNSTON, WM. SMITH, PETER CHRISTIE, M.P.

The PRESIDENT put the motion, which on a vote having been taken was declared carried.

FOURTH ANNUAL CANADIAN CLYDESDALE AND SHIRE SHOW.

The dates selected for this show for 1906 were just a week later than last year, viz.: February 7th, 8th and 9th, and they proved satisfactory both to the exhibitors and to visitors. Interest in this purely Heavy Horse Show seems to increase each year, and the attendance was large on the three days. The entry list was larger than in 1905, and it was the unanimous opinion of all present that there had never been brought together a better lot of heavy horses at one show, quality and conformation being the predominant feature. The sweepstakes both for Clydesdale stallions and mares went to Smith & Richardson, Columbus, who were the largest exhibitors, but Graham & Renfrew, Bedford Park, had some very choice animals out of which they won red ribbons in three sections. Other prominent exhibitors of Clydesdales were R. Ness & Son, Howick; O. Sorby, Guelph; John A. Boag & Son, Ravenshoe; C. R. Bennett, Russelton; A. G. Gormley, Unionville; Jas. Richardson, St. Pauls; John Vipond, Brooklin; A. Doherty, Ellesmere, and others.

Shires were represented by O. Sorby, Guelph, who won the sweepstakes for stallions, by J. M. Gardhouse, whose mare carried off the same honors for females, by J. B. Hogate, Weston; John Gardhouse & Sons, Highfield, and Thos. Irving, Winchester.

John W. Cowie had the winning stallion colt in the class open to both breeds, while Alex. Doherty's invincible Bobbie Burns carried off the red ribbon for geldings, followed in order by the two fine geldings of the Dominion Transport Co., Toronto, which were second and third prize winners here in 1905, the second prize winner, however, on that occasion being now third and his mate second. O. Sorby's team came in first place and John A. Boag & Son's was second.

The awards for Clydesdales were made by Robert Beith, Bowmanville, and John Bright, Myrtle, with Peter Christie, M.P., Manchester, as referee; Shires were judged by Robert Beith and Robert Graham, with Mr. Christie as referee.

FINANCIAL STATEMENT.

CANADIAN CLYDESDALE AND SHIRE SHOW.

	RECEIPTS.		1905		1906	
			\$	c.	\$	c.
Balance on hand.....			199	60	3	16
Interest.....			8	26		
Entry fees.....			198	00	278	00
Admission fees.....			309	25	304	15
Catalogues.....			26	75	34	05
Horse Breeders' Association.....			1000	00	1200	00
Clydesdale Association.....			55	00	500	00
Shire Association.....			50	00	50	00
Dominion Government grant.....			185	00	210	00
Dr. Andrew Smith.....					25	00
			2031	86	2604	36
	EXPENDITURE.					
Prize money.....			1060	00	1557	00
Judges' fees.....			100	00	120	00
Advertising.....			89	35	106	10
Postage.....			39	00	13	89
Printing.....			104	65	121	35
Secretary-treasurer.....			50	00	50	00
Other salaries and pay lists.....			102	50	109	00
Rent of Repository.....			200	00	200	00
Committee fees.....			141	00	102	00
Platform for ring.....			40	00	55	00
Rosettes, buttons and badges.....			92	15	78	50
Miscellaneous.....			10	05	5	40
Balance on hand.....			3	16	86	12
			2031	86	2604	36

DIRECTORS' MEETING.

A meeting of the Directors of the Canadian Horse Breeders' Association was held at the King Edward Hotel, Toronto, on Friday, February 16th, 1906, at 2 o'clock, p.m.

The PRESIDENT in calling the meeting to order said: It seems that there were some people at the annual meeting who thought that the grants to the Spring Horse Show and Open Air Horse Show were not passed. I thought that in order to have everything in proper order that it would be better to have a meeting called before the Horse Show Board meet. That was really the reason why I called this meeting although I believe the grant was passed. I will now ask the Secretary to read the minutes.

The Secretary then read the minutes of the last Directors' meeting held on Nov. 22nd, 1905, at the King Edward Hotel. He also read the minutes of the Directors' meeting after the Annual; they were also confirmed.

A discussion then took place *re* the grant of \$1,750 to the Canadian Horse Show, and it was moved by NOEL MARSHALL, seconded by W. E. WELLINGTON, That the Canadian Horse Breeders' Association grant the sum of \$1,750 towards the holding of the 12th Annual Canadian Horse Show. (Carried).

WM. SMITH: It is just possible that this meeting brings up a very much larger question than the simple matter of grants, and that is the Constitution, and as I look at it the whole thing is out of order. As I understand it, a

number of gentlemen are appointed from the different Associations, the Clydesdale, Shire, Hackney, Thoroughbred and Standard-bred. They were the original charter members. It also says that persons desirous can by paying \$1 become a member of the Association, but I do not understand it that anybody can become a Director. It says the Directors shall be elected by ballot at an open meeting. In looking over our constitution, I must confess that I think we are out of order. The constitution says this plainly, that a man can become a member by paying \$1, and that certain Associations have a right to send two delegates to the Horse Breeders' Association, these in open meeting have a right elect by ballot ten Directors, and these to elect their President and other officers. I am bound to say that the whole thing is out of order. The other night I did not want you to think that because I came from the country that I should be used as a tool, at all events not if I know it. This is merely to draw your attention to the fact that we were wrong the other night.

GEORGE PEPPER: Mr. Smith is absolutely right. Our Directors here are not properly elected. The constitution says the Association shall be governed by a Board of Directors consisting of ten Directors to be elected annually by ballot. The constitution simply says that any member can be elected for Directors, and that he must be elected by ballot. The constitution also says when new Horse Associations are formed for pure breeds of horses they may be admitted if approved by the Directors, and the constitution amended to allow of their representatives on the Board. Now we would have to change our constitution before we can admit the Harness, Hunter and Saddle Horse Society, and the Open Air Horse Association. This appears to be where we have got into the trouble, and I agree with Mr. Smith.

Mr. WADE explained that part of the constitution that said that Directors were to be balloted for at the annual meeting was considered to be a mistake, and it was thought better for the different Associations to appoint representatives, otherwise a meeting could elect all light horse men, or *vice versa*; so a ballot was always taken for the representatives sent by the different Associations, also each Association that was afterwards admitted was voted on by the whole annual meeting.

W. E. WELLINGTON: The election of Directors by ballot from the different Associations has been the procedure for a number of years, but it looks to me that what has been done is not legal, and if such is the case I do not think the Directors have any right to vote money until the constitution is amended. The constitution cannot be changed without calling a special meeting of the Horse Breeders' Association. From my point of view I think it might make in the future more trouble for the Association; that is if they continue without legal right to do so, someone may come at you and say that you had no authority to give that money away, and that you will have to make that money good. I think we should put ourselves right before we go any further.

JOHN BRIGHT thought that it would be necessary to call a Special General meeting to amend the constitution.

W. E. WELLINGTON: There is a clause there that checks the whole matter, and that is where it says that the constitution may be amended or changed, at any called or annual meeting with the approval of two-thirds of the members at such meeting, and I do not think that anything more than that is necessary.

ALD. SHEPPARD: Now, if you are all wrong in this matter, I think the best thing to do is to get matters put right before you go any further, and

I would suggest that you get the services of Mr. Chisholm, the City Solicitor, and ask him to give his views on the matter. Then when you see what he has to say about it you will then have time to act, but I think that is the best and easiest way.

T. A. GRAHAM: I agree with Ald. Sheppard that we put this matter in the hands of the City Solicitor, and get his views.

It was then moved by Mr. NOEL MARSHALL, seconded by ROBERT GRAHAM, that Mr. Chisholm be asked to give his opinion. (Carried.)

Moved by Dr. ORR, seconded by GEO. PEPPER: "That the following Committee be appointed to wait on Mr. Chisholm and explain the matter to him: John Bright, Myrtle; Ald. O. B. Sheppard, Toronto; W. E. Wellington, Toronto; Geo. Pepper, Toronto, and T. A. Graham, Claremont. (Carried.)

The meeting then adjourned.

DIRECTORS' MEETING.

A meeting of the Directors of the Association was held at the King Edward Hotel, Toronto, on Friday, March 9th, 1906, at 2 o'clock p.m.

The minutes of the last meeting were not read, as it was not considered to be a regular meeting.

The following opinion of the City Solicitor was read:

TORONTO, Feby. 23rd, 1906.

Re Canadian Horse Breeders' Assn.

DEAR SIR,—Messrs. Graham, Sheppard, Wellington, Pepper, and yourself waited upon me on the 20th instant, and submitted the following questions:—

1. Can more than nine directors be elected?
2. Can other Associations than those originally composing the Canadian Horse Breeders' Association be admitted without a resolution duly passed, or must the constitution be amended to allow the admission of such other Associations?
3. Can other Associations be admitted unless they have been "formed for pure breeds of horses" as required by article 8?
4. Is the election of directors invalid if not conducted by ballot?

I have taken time to consider these questions, and have perused the minutes, the Articles of Association, and the provisions of the Agriculture and Arts Act, and I beg to answer the questions in the order above stated.

1. The Agriculture and Arts Act which regulates your Association enacts:—

"33. That the Association at its annual meeting shall elect not less than five or more than *nine* directors."

The Articles of your Association provide for the election of ten directors, and I am informed that at your last meeting sixteen directors were elected.

Section 33 of the above mentioned Act is undoubtedly inconsistent on its face, as in the case of one at least of the Associations mentioned it permits the election of thirteen directors after confining the number to nine, and as to other Associations provides that they may by by-law arrange for the representation of directors. I cannot reconcile these apparent inconsistencies,

but must conclude that so far as your Association is concerned your directorate should be limited to nine. I am told that the Act is to be revised this present Session and perhaps the section as to directors might be amended in conformity with your practice.

If I am correct in my conclusions as to the limit of the number of directors, then a Board elected as yours has been would not be validly elected and could not legally transact business.

2. Article 2 provides that the directors shall be elected from "*members* of this Association and representing as far as practicable the different Horse Breeders' Association now in existence"—setting them out—and Article 8 provides for the admission of new Horse Associations formed for pure breeds of horses, if approved by the directors and the constitution amended to allow of other representation on the Board.

The only qualification at present for a director is that he shall be a member of the Association; there is what I regard merely as a recommendation or affirmation of the principle that such directors shall represent, as far as practicable, the different Horse Breeders' Associations; I do not think that is necessary qualification under your present constitution. I think a member may be elected a director even if he is not a member of *any* Horse Breeders' Association. When Article 8 speaks of the *admission* of other Associations it can only mean that the selection of directors from such Associations as well as from those named in Article 2 shall be approved by the directors, and that the constitution shall be amended to add their names to the list contained in Article 2. If I am right in my opinion that no other qualification than membership is necessary, then it does not matter whether such Associations are "admitted" or not.

3. Whether Associations have been "formed for pure breeds of horses" is a matter to be determined by your own Association. It is a question of fact in each case to be decided by you, and I do not think that any Court or any outside body has a right to question your decision. Whether the particular Associations which have lately been added comply with that stipulation is a question of fact which I therefore think is not necessary or proper for me to endeavor to decide.

4. The mode of election is a matter of internal regulation. The membership at any annual or other general meeting would have a right to make unanimous appointments notwithstanding a provision for election by ballot, and particularly if no objection has been taken at the time to the mode of election I am of opinion that it cannot afterwards be called in question.

To recapitulate:—In my opinion your Board of Directors is improperly constituted, because there are more than nine. A change of the constitution and a new election would, of course, be the natural consequence unless the Act is amended so as to cure this. Assuming that such legislation is passed, I do not think anything else need be done at present. If it is felt that in the interests of the Association, and the objects for which it receives a Government grant, it is desirable that this directorate should be restricted to members of certain other Associations, then the constitution should be amended to make that point clear. It would then probably follow that the membership of the Association should be restricted in the same manner, as it would appear to me an anomaly that a person might be a member and yet not be qualified to be elected a director.

I remain,

Yours truly,

(Signed) W. C. CHISHOLM.

A Committee was then appointed to draft a new Constitution and By-Laws, this Committee to meet on Tuesday, the 13th of March, at 2 o'clock p.m., at the King Edward Hotel, the Secretary in the meantime to send a copy of the old constitution to each member of the Committee.

The Committee is as follows:—Thos. A. Graham, Claremont; Wm. Smith, Columbus; W. E. Wellington, Toronto; John J. Dixon, Toronto; Geo. Pepper, Toronto; Dr. And. Smith, Toronto; W. J. Stark, Toronto; Ald. O. B. Sheppard, Jess. Applegath.

The meeting then adjourned.

SPECIAL MEETING.

A special meeting of the Canadian Horse Breeders' Association was held in the King Edward Hotel, Toronto, on Friday, March 30th, 1906, at 2 o'clock, p.m.

The meeting was a large and representative one.

Mr. H. Wade took the chair and called the meeting to order. He said he believed he was the only legal officer left on the Association and as such would take the chair.

He then read the following circular which explained the reason for calling the meeting:—

TORONTO, March 15th, 1906.

At the annual meeting of the Association held on the 9th of February last, more Directors were elected than the Provincial Statutes allow. Consequently it is necessary, in order to legalize this Association, to call a special meeting of the members to elect another Board of Directors, which meeting is called for Friday, the 30th of March next, in room G of the King Edward Hotel, Toronto, at 2 o'clock p.m. Also to adopt a new constitution for the future guidance of this Association. Kindly attend.

HENRY WADE,

Secretary-Treasurer,

The circular just read will explain briefly the reason for calling this special meeting of the members.

This Association was organized in 1895 with the proviso that two directors be appointed from each Horse Breeders' Association then in existence, there were then five of them, viz., Clydesdale, Shire, Hackney, Trotting and Pacing, and Thoroughbred, so the first constitution provided for ten directors to be elected annually by ballot, from members of this Association, and representing as far as possible, the different Horse Breeders' Associations then in existence. This clause was never acted on and instead, the different Horse Breeders' Associations were asked to nominate two of their members for Directors, which was found more satisfactory, the annual meeting accepting these names from the different meetings by a resolution, electing them all Directors of the Horse Breeders' Association. This Board then elected the officers, such as President, First and Second Vice-Presidents from amongst their members, as per constitution. Article 8 of the constitution has this clause: "When new Horse Associations are formed for pure breeds of horses they be admitted if approved by the Directors, and the constitution amended to allow of their representatives on the Board."

In 1899 the first departure occurred in admitting other Associations, and the Draught Horse Association of Goderich was admitted, and the two representatives from that Association were elected additional Directors along with the ten other Directors.

In 1899 the second departure was made, and the Harness, Hunter and Saddle Horse Society were admitted by resolution, and the representatives were elected to serve as directors.

In 1902 the Canadian Pony Society was also admitted by open vote and their two representatives were also made Directors.

In 1905 the fourth Society, called the Open Air Horse Parade Association, was accepted by open vote at the annual meeting, and their two representatives were elected Directors along with other sixteen would now make eighteen Directors, only that the Draught Horse Association has given up business.

At the annual meeting held in February, 1906, the usual method was followed, and sixteen Directors were elected, they, amongst themselves, electing the officers.

This proceedure had been the custom since the commencement of the Horse Breeders' Association, without looking into the particulars laid down by the constitution, as to altering the constitution from time to time on the admittance of a new breeders' Association.

There was a difference of opinion as to whether grants to shows were to be voted on at the annual meeting or at the directors' meeting, some thinking that the grants to the Canadian Horse Show and the Open Air Horse Parade were not passed. The President requested me to call a meeting of the Directors for the 16th of February to have these grants confirmed, so as to have everything in proper order.

Objections were taken at that meeting to the proceedings, reason given was that the constitution had not been adhered to, and that the annual meeting and this meeting were out of order, and not legal. The constitution was read and the meeting by resolution agreed to consult the City Solicitor and get his views, and a committee appointed to wait on him and explain the matter which was done.

His opinion is that the Board of Directors is improperly constituted, because there are more than nine Directors.

This opinion was shown to the Minister of Agriculture, and the following letter dealing with the matter was received from him:

TORONTO, March 28th, 1906.

DEAR SIR,—In reply to your letter of the 27th instant, asking for instructions as to the election of Officers and Directors by the Canadian Horse Breeders' Association, I beg to inform you that, after careful consideration, I am of the opinion, and (in accordance with Section 4 of the Agriculture and Arts Act which authorizes me to decide matters in doubt and dispute) herewith decide that the Canadian Horse Breeders' Association, under Section 33 of the Agriculture and Arts Act, is authorized to elect for the current year a President, one or two Vice-Presidents, and also not less than five or more than nine Directors, all of whom shall constitute the Board of Directors. You are empowered, therefore, under this Act to elect a Board of Directors which must not exceed twelve persons. You may, however, if you so desire, elect as an additional Director any officer of the Ontario Agricultural College. (See Sub-section 10 of the Act.)

In regard to the constitution submitted, I beg to inform you that I am introducing to the Legislature a Bill, An Act Respecting Agricultural Associations, which will include all such organizations as the Canadian Horse Breeders' Association. As this Act may somewhat affect your Association, I beg to request that the constitution of your Association be left over until after this Bill is disposed of by the Legislature. Meanwhile, the work of your Association need not be interfered with, as the election of the Board of Directors provided for in Section 33 of the Act will give you a working organization. Your Association has the power to arrange by by-law as to the representation of these Directors.

Yours very truly,

(Signed) NELSON MONTEITH,
Minister of Agriculture.

Mr. Wade then explained that the election would be held as requested by the Minister of Agriculture under section 33 of the Agriculture and Arts Association which allowed nine Directors and three Executive Officers, but this Act did not say that the vote should be by ballot. He thought, however, that the meeting should decide whether the vote should be by ballot or by open vote.

LIST OF OFFICERS.

<i>Honorary President</i>	DR. ANDREW SMITH, Toronto.
<i>President</i>	PETER CHRISTIE, Manchester.
<i>1st Vice-President</i>	THOS. A. GRAHAM, Claremont.
<i>2nd Vice-President</i>	JOHN J. DIXON, Toronto.
<i>Secretary-Treasurer</i>	HENRY WADE, Toronto.

Directors.

ROBERT DAVIES, Toronto.	WM. SMITH, Columbus.
ROBERT BEITH, Bowmanville.	W. E. WELLINGTON, Toronto.
GEO. PEPPER, Toronto.	JOHN BRIGHT, Myrtle.
ALD. O. B. SHEPPARD, Toronto.	W. J. STARK, Toronto.
E. C. H. TISDALE, Beaverton.	

Auditor..... GEORGE EDWARDS, C.A., Toronto.

Delegates to Advisory Board.

Representing Heavy Horses: JOHN BRIGHT, Myrtle; W. E. WELLINGTON, Toronto.
Representing Light Horses: T. A. GRAHAM, Claremont; GEORGE PEPPER, Toronto.

Representatives to Horse Show Committee:

THOS. GRAHAM, DR. J. O. ORR, J. M. GARDHOUSE, J. J. DIXON, O. B. SHEPPARD,
SAMUEL MCBRIDE, GEORGE PEPPER, NOEL MARSHALL, W. J. STARK, J. APPLGATH.

GEO. PEPPER: I think we should ask the Directors that were appointed for the Spring Stallion Show to report, we have not heard from them as to how much money they have made, and I think we should know something about it.

WM. SMITH: Mr. Pepper's suggestion is a very timely one, and whilst I haven't the figures on my finger ends, I might say that there is a deficiency. I would ask the Secretary to read the exact figures.

Mr. Wade then read the financial statement of the Stallion Show, saying there was a shortage of \$17.11, without any allowance for the expenses of the Committee.

It was then moved by Mr. GEO. PEPPER, seconded by WM. SMITH, that a cheque be drafted amounting to \$200 in favor of the Clydesdale and Shire Spring Stallion Show to cover deficiencies. (Carried.)

A resolution was then read from the Industrial Exhibition, asking for a grant of \$300 to allow them to double the first prize on all classes of breeding stallions.

GEO. PEPPER: We are all here as breeders of all kinds of horses, now we have given away each year, and are giving away this year \$3,000 to the heavy horses, and not one cent of the funds of this Association have gone to the light horses. I do not think this is fair. I might say that we are getting out of money now, and as the Ontario Government have cut off the grant this year, I think until we know just what the new Government will do Mr. Monteith's instruction, and until we know where our funds are coming from in the future, we should not grant this sum. The Toronto Industrial Exhibition should not ask us to give any more money when they were able to return the citizens of Toronto \$35,000. They should not ask us to make up that prize list and increase us while they are making so much money.

ALD. SHEPPARD: Mr. Pepper says that the National Exhibition gave back \$35,000 to the citizens of Toronto. How much have they given to the National Exhibition in the last three years? They have given them \$2,000,000, and have expended in the last two years over half a million. I think it is a step in the right direction, as far as this Association is concerned. The Breeders' Association has \$5,500 in money, it was given them by the Government of Ontario to encourage the breeding of horses. They give to the Horse Show \$1,750, and get back \$1,800, what is that? it is simply speculation. The Horse Breeders' Association is for the encouragement of the horse interest, and I think it is only right that we should give them that sum.

W. E. WELLINGTON: I am surprised that Mr. Pepper should take any such course. This Association is for the promotion and encouragement of breeding horses and the \$300 asked for by the National Exhibition should be given. It is not given to the heavy horses alone, but is divided amongst all classes, and all get the benefit of it. If this Association is for the encouragement of horses it should give this sum.

WM. SMITH: There are two or three ways of looking at this matter. For a number of years I have had the honor of representing the Clydesdale Horse Association on the National Exhibition Board, I was good enough to be asked to go and help them revise the prize list; but that was as far as my services were required, as the judges recommended by the Clydesdale Association were hardly ever elected by the National Board. This has caused a great deal of dissatisfaction amongst the breeders, and I feel like not supporting this resolution until better justice has been done us.

Moved by Ald. O. B. SHEPPARD, seconded by W. E. WELLINGTON, "That \$300 be granted to the Canadian National Exhibition to allow them to double the first prize on all classes of breeding stallions." (Carried).

As the delegates to the National Exhibition, the Western Fair and the Canada Central Exhibition were elected by the annual meeting it was not thought necessary to re-elect them.

Moved by JOHN BRIGHT, seconded by JAS. HENDERSON, "That the representatives already appointed from this Association to the Canadian Horse Show be re-elected." (Carried).

Dr. W. A. YOUNG: At the annual meeting of this Association I think the sum of \$200 was voted to the Open Air Horse Parade Association and if I am in order I would like to ask if this sum properly passed, and if there are any minutes to show that it is?

GEO. PEPPER: That was passed at the open and general meeting. It was then moved that the meeting adjourn.

TWELFTH CANADIAN HORSE SHOW.

The twelfth Canadian Horse Show was once again held in the Armouries, Toronto, by permission of the Militia Department, the dates being April 24th, 25th, 26th, 27th and 28th, and was a great success. The Show was favored with the presence of H. R. H. Prince Arthur of Connaught, who formally opened it on Wednesday afternoon. Owing to the large number of classes, which were no less than 95, an increase of 8 over the previous year, it was found necessary to commence the show on Tuesday evening, when the largest class of all, for jumping, open to all, with 36 entries, and another large saddle class, were judged.

The quality of all the classes showed the general tendency throughout the country to raise the standard of breeding, for the improvement of which this show was undoubtedly the main cause in the first instance, and is still a predominant factor towards this end. The entries were very large, and would have been even larger had the horses been available, but good horses now are so scarce that, although they have searched the whole country, dealers and exhibitors were fain to be content with what they already had in their stables.

Thoroughbreds were good, and the numbers about the same as usual, the stable of Robert Davies furnishing the principal winners. Roadster stallions, both trotting and pacing, were well up to the average and brought out entries from various parts of the Province.

Hackneys also were well shown and included entries from Robert Beith, Bowmanville; H. J. Spencely, Box Grove; O. Sorby, Guelph; J. B. Hogate, Weston; T. H. Hassard, Millbrook; Telfer Bros., Milton; W. R. Lowes & Co., Brampton; W. D. Woodruff, St. Catharines, and others. The English Hackney Horse Society's medal for mares went to H. N. Crossley, Rosseau.

Both first and second prizes for High Stepping Registered Stallion of any breed in harness went to Crow & Murray, Toronto, for two Standard Breds. O. Sorby's Hackney won first for stallion of any age or breed best qualified to produce carriage horses.

Heavy Draughts, both single and in pairs, were excellent. The Dominion Transport Co. won first in singles and pairs, O. Sorby being well up with second for pairs. The Dominion Transport Co. furnished the only four-in-hand of Heavy Draughts.

Space will not permit of our referring otherwise than generally to the harness, saddle and other classes. They were all well filled with an excellent lot of horses ranging from 15 to 30 in a class. Perhaps if there was any choice, the harness horses led in quality, but that the saddle classes were fully up to the mark is evident from the fact that Jos. Kilgour's Boston winners, in some instances, more than met their match here. The high jump was won by Miss Pepper's Myopia with a jump of 6 feet 10 inches.

Ponies, while not quite so numerous as last year, were a splendid lot, including Graham & Renfrew's new purchase, Plymouth Horace, a splendid little Hackney stallion of 13 hands. Mrs. Wilmot's winning pony Tiddley Winks, and C. E. Gudewill's Hillhurst Bonnie, a registered Hackney, not to speak of a number of good ones owned locally. Polo ponies made a fine display which pleased the audience. The classes for delivery wagons and butcher's carts were well filled with a superior lot of horses and outfits.

FINANCIAL STATEMENTS

ELEVENTH CANADIAN HORSE SHOW, 1905

RECEIPTS.

Badges, tickets and railway coupons	\$5,286.85
Boxes	4,745.00
Subscriptions—cash \$874.50, plate \$995.00	1,869.50
Horse Breeders' Association grant	1,750.00
City Council grant	750.00
Hackney Horse Society's grant	50.00
Prince of Wales' prize	50.00
Ontario Jockey Club's grant	100.00
Entry fees	2,585.00
Programmes	400.00
Protest moneys forfeited	30.00
	<u>\$17,616.35</u>

EXPENDITURE.

Prize money—cash \$5,285.00, plate \$1837.70	\$7,122.70
Insurance on Armouries and accident insurance	274.00
Seating, fitting and decorating Armouries	1,577.85
Judges fees	600.00
Salaries and wages	889.40
Manager and Secretary-Treasurer	700.00
Printing and lithographing	698.10
Stationery etc.	17.55
Musical ride	157.00
Advertising	558.67
Rent of office furniture	10.10
Badges	60.00
Music	453.50
Meals and luncheons	228.85
Postage	168.90
Rosettes	163.00
Miscellaneous	99.14
Balance	3,837.59
	<u>\$17,616.35</u>

Surplus, Toronto Hunt \$1,918.80

Surplus, Horse Breeders 1,918.79

\$3,837.59

Certified correct,

W. S. ANDREWS, Auditor.

TWELFTH CANADIAN HORSE SHOW TO JUNE 20TH, 1906

RECEIPTS.

Badges, tickets and railway coupons	\$4,858.20
Boxes	4,355.00
Toronto Hunt Club subscriptions—cash \$1,325.90, plate \$175.00	1,500.00
Canadian Horse Breeders' Association grant	1,750.00
City Council grant	750.00
Hackney Horse Society's grant	75.00
Ontario Jockey Club's grant	100.00
Entry fees	2,363.00
Catalogues	460.00
Canadian National Exhibition's gold medal	50.00
	<u>\$16,261.20</u>

EXPENDITURE.

Prize money—cash \$5,605.00, plate \$1,810.60	7,415.60
Insurance on Armouries and accident insurance	275.00
Seating, fitting and decorating Armouries	1,881.98

FINANCIAL STATEMENTS—Continued.

Judges' fees	665.25
Salaries and wages	1,386.15
Printing and lithographing	751.51
Stationery	25.64
Advertising	714.80
Office furniture	10.32
Badges	154.60
Rosettes	151.00
Music	429.00
Luncheons and meals	287.85
Postage	107.13
Telegrams	7.82
Presentation to H.R.H. Prince Arthur	100.50
Miscellaneous	5.60
Balance	1,891.45
	<u>\$16,261.20</u>

Certified correct, H. WADE, *Secretary-Treasurer*.
W. S. ANDREWS, *Auditor*.

30th June, 1906.

DISTRIBUTION OF BALANCE.

One-half to Canadian Horse Breeders' Association	\$945.73
One-half to Toronto Hunt	945.72

CANADIAN HORSE BREEDERS' ASSOCIATION.

MEMBERS FOR 1906.

Name	Address	Name	Address
Appelgath, Jess	Toronto	Herold, P., V. S.	Tavistock
Bailey, Jas. D.	75 Yonge St., Toronto	Jipkin, Wm. L.	388 Clinton St., Toronto
Barker, Albert W.	49 Louisa St., Toronto	Johnston, A.	Greenwood
Beck, Hon. Adam	London	Lee, Major A. B.	c-o Rice Lewis & Son, Toronto
Beith, Robert	Bowmanville	Live Stock Commissioner	Ottawa
Blrrell, D.	Greenwood	Locke, J. H.	110 Robert St., Toronto
Boag & Son, John A.	Ravenshoe	Montgomery, J. D.	46 King St. W., Toronto
Boeckh, Chas.	80 York St., Toronto	Moore, Geo.	Waterloo
Bond, Robert	19 Sheppard St., Toronto	Marshall, Noel	Toronto
Bright, John	Myrtle	Mossop, W.	St. Marys
Brown, W. C.	Meadowvale	McBride, Ald. S.	249 Bathurst St., Toronto
Campbell, E. T.	41 Major St., Toronto	McEwen, Col. R.	Byron
Canfield, Jas.	Woodstock	McFarren, Jas.	140 Sherbourne St., Toronto
Cargill, H.	Cargill	McGillivray, John A.	Temple Building, Toronto
Carstairs, David	Bowmantown	McIntosh, D.	Brucefield
Christie, P., M.P.	Manchester	McIntosh, R. K.	Toronto
Clinch, C. W.	Molsons Bank, Toronto	Noble, Jas.	70 Howard St., Toronto
Cosgrove, L. J.	Brewing Co., Niagara St., Toronto	Orr, Dr. J. O.	City Hall, Toronto
Courcey, John	Lucan	Otter, W. D.	Brigadier General, Toronto
Cox, E. W.	Canada Life Building, Toronto	Pepper, Geo.	253 Huron St., Toronto
Crow, Thos. A.	619 Yonge St., Toronto	Peters, Dr.	102 College St., Toronto
Dalgaty, Bros.	Glencoe	Robertson, J. Ross	The Telegram, Toronto
Delamere, Col. J. M.	Parliament Buildings, Toronto	Robertson, Major D. M.	Confederation Life Building, Toronto
Dixon, J. J.	Canada Life Building, Toronto	Richardson, F.	Columbus
Dodds, E. King	105 York St., Toronto	Robinson, H. M.	8 Albert St., Toronto
Doherty, Alex.	Ellemere	Rodda, I.	Toronto
Edwards & Co., W. V. C.	Rockland	Rutherford, J. G.	Veterinary Director General, Ottawa
Elliott, C., V. S.	St. Catharines	Sheppard, Ald., O. B.	City Hall, Toronto
Flatt, W. D.	378 Hess Street, Hamilton	Smith, Dr. Andrew	46 Temperance St., Toronto
Foster, Geo. V.	114 Bay Street, Toronto	Smith, Wm.	Columbus
Gardhouse, J. M.	Weston	Sorby, O.	Guelph
Gilmour, Dr. J. L.	Toronto	Southam, Mr.	Mail Job Printing Co., 75 York St., Toronto
Gleeson, N.	Greenwood	Speers, J. V.	Atha
Gooderham Bros.	Wexford	Spencely, H. J.	Box Grove
Gooderham, Geo. H.	504 Jarvis St., Toronto	Stark, W. J.	Toronto
Good, H. J. P.	11 Ann St., Toronto	Stewart, W. W., V.S.	46 Temperance St., Toronto
Gormley, A. G.	Unionville	Stone & Wellington.	49 Wellington St. E., Toronto
Graham, Bros.	Claremont	Taylor, A.	100 Baldwin St., Toronto
Graham, T.	Claremont	Tisdale, E. C. H.	Beaverton
Graham, W.	Claremont	Tomlin, H. C.	420 Bathurst St., Toronto
Graham & Renfrew	Bedford Park or Toronto	Wagg, N.	Claremont
Greenlees, Hugh	Bowmanville	Waldie, Alex. C.	Toronto
Hall, John B., Dr.	326 Jarvis St., Toronto	Wetherall, Jas.	Galt
Henderson, Jas.	Belton	Wilkie, Wm.	c-o Hendrie Cartage Co., Toronto
Henderson, J. Gordon	Hamilton	Young, Dr., W. A.	145 College St., Toronto
Henderson, Wm., Jr.	Hamilton		

APPENDIX

LIST OF PRIZE WINNERS.

Winter Fair, Guelph, 1905.

CATTLE

SHORTHORNS.

Steer, 2 years and under 3. Three entries.

- 1st. James Rennie & Son, Blackwater, Moss Side Laddie; sire, Crimson Laddie, 36133; dam, Idonia 4th, 52441.
- 2nd. John Brown & Sons, Galt, White Duke; sire, Little Bobs, 34742; dam, May Queen 4th, 29935.
- 3rd. Fried's Sons, Roseville, Beauchamp; sire, Beauchamp (imp)., 32053; dam, Victoria 2nd, 45083.

Steer, 1 year and under 2. Six entries.

- 1st. Israel Groff, Alma, Royal Hero 2nd; sire, Royal Hero, 34679; dam, Lady Sarah 6th, 50521.
- 2nd. A. Young, Glanford, Bold Boy; sire, Prince William, 31054; dam, Edna, Vol. 16.
- 3rd. A. Young, Nabisco; sire, Prince William, 31054; dam, Joan of Arc, Vol. 14.
- 4th. D. Talbot & Son, Everton, Ap. Jenkyn; sire, Lord Chesterfield, 40610; dam, Eagle Baroness, 47596.
- 5th. James Rennie, & Sons, Blackwater, McPhail; sire, Crimson Lad, 43523; dam, Valasco Maid, 52042.

Steer under 1 year. Five entries.

- 1st. W. R. Elliott & Sons, Guelph, King Edward; sire, Lucerne (imp)., 50053; dam, Rantin Flossie, Vol. 18.
- 2nd. J. W. Sutton, Ospringe, Ned; sire, Crimson Ribbon, 40918; dam, Lady Pink, Vol. 15.
- 3rd. A. Young, Glanford, Togo; sire, Prince William, 31054; dam, Joan of Arc, Vol. 14.
- 4th. James Rennie & Sons, Blackwater, King Edward; sire, Crimson Duke, 48930; dam, Idonia 3rd, 41390.
- 5th. Fried's Sons, Royal; sire, Beauchamp (imp)., 32053; dam, Countess, 39694.

Cow or Heifer, 3 years or over. Seven entries.

- 1st. Andrew D. Schmidt, Elmira, Jenny Violet; sire, Captain Watt, 26141; dam, Dollie, 31693.
- 2nd. John Brown & Sons, Galt, Mary Eugene, Vol. 17; sire, Captain Watt, 26141; dam, Annie May, 23302.
- 3rd. H. K. Fairbairn, Thedford, Myrtle 2nd, 50078; sire, Royal Prince, 31241; dam, Myrtle, 28235.
- 4th. James Leask, Greenbank, Fickle Fortune, 31179; sire, Royal Mail, 69477; dam, Fortune 2nd, (imp).
- 5th. Fried's Sons, Roseville, Victoria 2nd; sire, Kinellar Stamp (imp)., 28867; dam, Victoria of Roseville, 21760.

Heifer, 2 years and under 3. Three entries.

- 1st. James Rennie & Sons, Blackwater, Crimson Flower Belle; sire, Crimson Laddie 36133; dam, Idonia 3rd, 41390.
- 2nd. R. Dickson & Sons, Guelph, Matilda 2nd; sire, Valasco, 30861; dam, Matilda, 39376.
- 3rd. E. Brien & Son, Ridgetown, Easter Gem, 54617; sire, Diamond Chief, 39110; dam, Easter Lily, 44047.

Heifer, under 2 years. Two entries.

- 1st. G. & W. Parkinson, Eramosa, Rowena, 69280; sire, Golden Prince, 41108; dam, Sannie's, 52237.
- 2nd. W. R. Elliott & Sons, Guelph, Violet of Maple Hill, Vol. 21; sire, Royal Hero, 40102; dam, Miss Hap, 45969.
- 3rd. J. Morgan & Sons, Kerwood, Victoria Queen; sire, Viceroy, 39913; dam, Diamond Queen.

Best Shorthorn Steer. Nine entries

1st. James Rennie & Sons, Blackwater.

HEREFORDS AND ABERDEEN-ANGUS.

Steer or Heifer, 2 years and under 3. Three entries.

- 1st. James Bowman, Guelph, Elm Park Mayflower, 63339; sire, Kyma's Heir, 24835; dam, Kyma of Tweedhill, 17606.
 2nd. A. Govenlock, Forest, Rosebud, 2363; sire, Spartacus, 1716; dam, Lily K., 1781.
 3rd. F. W. Stone Stock Co. Guelph, Peach Stone, C., 53846; sire, Stone's Clarence 2nd, 109049; dam, Peach 34th, 95240.

Steer or Heifer, 1 year and under 2. Six entries.

- 1st. R. I. Penhall, Nober, Ravenswood; sire, Corporal, 160020; dam, Merry Lass, 3033.
 2nd. James Bowman, Guelph, Elm Park Rosebud, 72545; sire, Prince of Benton, 58632; dam, Elm Park Belle 4th, 54035.
 3rd. Samuel Young, Guelph, Black Boy; sire, Oxford King, 24359; dam, Colein of Springside, 555.
 4th. John A. Govenlock, Forest, Little Swearheart, 3027; sire, England, 1110; dam, Lily K., 1781.
 5th. F. W. Stone Stock Co., Guelph, Sweet Betty, 183708; sire, Baronet, 100989; dam, Sweetheart 33rd, 100988.

Steer or Heifer, under 1 year. Nine entries.

- 1st. John A. Govenlock, Forest, Pansy, 3903; sire, Imperial, 2034; dam, Julia 1911.
 2nd. H. McDougall, Guelph, Rosey Bright 2nd, 84622; sire, Prince of Benton, 58632; dam, Rosey Bright, 40483.
 3rd. R. I. Penhall, Nober, Merlin; sire, Corporal, 160020; dam, Merry Lass, 3033.
 4th. James Bowman, Guelph, Elm Park Keepsake 2nd, 83324; sire, Prince of Benton, 58632; dam, Kyma 11th, 45947.
 5th. James Bowman, Guelph, Elm Park Rosebud 2nd, 83327; sire, Prince of Benton, 58632; dam, Elm Park Belle 3rd, 34620.

Cow or Heifer, 3 years and over. Six entries.

- 1st. F. W. Stone Stock Co., Guelph, Sweet Bar, 137338; sire, Baronet, 100989; dam, Sweetheart 33rd, 100988.
 2nd. Samuel Young, Guelph, Springside Alexandria, 47501; sire, Campbell of Tweedhill, 28216; dam, Addie Mac, 29313.
 3rd. Samuel Young, Guelph, Springside Queen 55872; sire Britannia of Willow Grove 32850; dam, Kyma of Tweedhill 2nd, 36460.
 4th. F. W. Stone Stock Co., Guelph, Peach 36, 109047; sire, Lord of Ingleside 4th, 83599; dam, Peach 28th, 63844.
 5th. James Bowman, Guelph, Elm Park Belle 4th, 54035; sire, Kyma's Heir, 24835; dam, Heather Belle, 22610.

GALLOWAYS AND DEVONS.

Steer or Heifer, 2 years and under 3. Two entries.

- 1st. C. C. Rudd, Eden Mills, Peter; sire, Welsh Pete, 7349; dam, Ella, 1128.

Steer or Heifer, 1 year and under 2. Three entries.

- 1st. C. C. Rudd, Eden Mills, Jake; sire, Welsh Pete, 7349; dam, Ella, 1128.
 2nd. D. McCrae, Guelph, Marion of Holme, 24798; sire, Wedholme, 22684; dam, Molly of K. (16908).
 3rd. D. McCrae, Nellie of Guelph, 1410; sire, Victory, 8100; dam, Nellie 12th, (16460).

Steer or Heifer, under 1 year. Three entries.

- 1st. C. C. Rudd, Eden Mills, O. K. S., Welsh Pete, 7349; dam, Ruby 2nd, 1178.
 2nd. D. McCrae, Fairy Ring, 1408; sire, Cedric 4th, (6466); dam, Fairy Rags, 29560.
 3rd. D. McCrae, Mary A., 1409; sire, Cedric 4th, (6466); dam, Duchess 15th, 14853.

Cow or Heifer, 3 years and over. Two entries.

- 1st. D. McCrae, Guelph, Lismore Lady, 18491; sire, Gladstone Boy, 13879; dam, Lismore Lass, 12972.
 2nd. C. C. Rudd, Eden Mills, Ruby 2nd, 1178; sire, Hero R., 1049; dam, Trilby, 1085.

GRADES OF CROSSES.*Steer, 2 years and under 3. Three entries.*

- 1st. James Leask, Greenbank, Lord Grey. 2nd. Michael Wolfe, Hespeler, Freddie.

Steer, 1 year and under 2. Thirteen entries.

- 1st. James McCallum, Amulree, John. 4th. G. & W. Parkinson, Eramosa, Gazer.
 2nd. James Leask, Greenbank, Money-maker. 5th. John Dickieson, Eramosa, William A.
 3rd. John Elliott, Marden, Prince.

Steer, under 1 year. Nine entries.

- 1st. Israel Groff, Alma, Victor's Favorite. 4th. G. & W. Parkinson, Eramosa, Edward.
 2nd. Peter Stewart, Everton, Chester White. 5th. H. MacDougall, Guelph, (———).
 3rd. James Watson, Sonya, Scottie.

Cow or Heifer, 3 years or over. Two entries.

- 1st. J. O. Pickard, Galt, Lily Varco. 2nd. James Leask, Greenbank, Maud.

Heifer, 2 years and under 3. Five entries.

- 1st. James Leask, Greenbank, Roan Belle. 3rd. James Rennie & Sons, Blackwater,
 2nd. John Brown & Sons, Galt, Jewel. 4th. Samuel Young, Guelph, Red Cross.

Heifer, under 2 years. Six entries.

- 1st. James Leask, Greenbank, Kate. 4th. R. W. McKinnon, Coningsby, (———).
 2nd. Andrew Aitchison, Guelph, Primrose. 5th. John Brown & Sons, Galt, Amelia.
 3rd. Robert Dawson, Guelph, Nettie.

Three Export Steers. Five entries

- 1st. John Brown & Sons, Galt. 4th. John Brown & Sons, Galt.
 2nd. James Rennie & Sons, Blackwater. 5th. G. B. Hood, Guelph.
 3rd. James Leask, Greenbank.

Grand Championship, Best Beef Animal. Twenty-five entries.

- 1st. James Rennie & Sons, Blackwater.

DRESSED CARCASSES.*Pure Breds. Eleven entries.*

- 1st. James Bowman, Guelph. 4th. W. R. Elliott & Sons, Guelph.
 2nd. James Rennie & Sons, Blackwater. 5th. R. I. Penhall, Nober.
 3rd. A. Young, Glanford.

Grades or Crosses. Ten entries.

- 1st. H. McDougall, Guelph. 3rd. James McCallum, Amulree.
 2nd. John Brown & Sons, Galt. 4th. Jas. S. Wallace, Glenmorris.

Pair Fat Cattle, Any Age, Breed, Grade or Cross. Fifteen entries.

- 1st. James Rennie & Sons, Blackwater. 4th. James Leask, Greenbank.
 2nd. James Leask, Greenbank. 5th. A. Young, Glanford.
 3rd. John Brown & Sons, Galt.

Best Export Steer. Sixteen entries.

1. John Brown & Sons, Galt.

Grade Steer or Heifer, sired by pure-bred Aberdeen-Angus bull. Seven entries.

- 1st. John Brown & Sons, Galt, (———); sire, Laird of Tweedhill, 29486.
 2nd. R. W. McKinnon, Coningsby, (———); sire, Proctor's Black Prince, 34504.
 3rd. John Brown & Sons, Galt, (———); sire, Laird of Tweedhill, 29486.
 4th. John Brown & Son, Galt, (———); sire Laird of Tweedhill, 29486.

Steer or Heifer, any age. Four entries.

- 1st. R. I. Penhall, Nober. 2nd. John Brown & Sons, Galt.
 3rd. John Brown & Sons, Galt.

Grade Steer or Heifer, fed in the County of Wellington and owned by Exhibitor at least three months previous to the Show. Ten entries.

- 1st. John Elliott, Marden. 2nd. Israel Groff, Alma.

Grade Steer, Sired by Pure-Bred Shorthorn Bull. Twenty entries.

- 1st. James Leask, Greenbank, Lord Gray; sire, Moneyfuffel Banner, 38736.
 2nd. James McCallum, Amulree, Captain; sire, Captain Watt, 26141.
 3rd. James Leask, Greenbank, (———); sire, Moneyfuffel Banner, 38736
 4th. James Rennie, Blackwater, (———); sire, Crimson Lad, 43523

SHEEP.

COTSWOLDS.

Ewe, under 1 year. Eleven entries.

- 1st. Snell & Lyons, Snelgrove, R. P. Snell's 853, 36420; sire, Garne's 346, 19038; dam, Garne's 265, 24849.
 2nd. Samuel Bailey, Forest, Bailey's 251, 35643; sire, Garne's 56, 24808; dam, Thomas 70.
 3rd. E. Brien & Son, Ridgetown, Brien's 116; 36358; sire, Park ram, 41, 24969; dam, Brien's 14, 22256.
 4th. Snell & Lyons, Snelgrove, R. P. Snell's 857, 36421; sire, Garne's 346, 19038; dam, Garne's 265, 24849.
 5th. E. F. Park, Burgessville, Hopeful, 35059; sire, Ross, 23566; dam, Park Ewe, 22695.

Wether, 1 year and under 2. Six entries.

- 1st. E. Brien & Son, Star One; sire, Park Ram 41, 24969; dam, Brien's 21, 24743.
 2nd. E. Brien & Son, Enterprise; sire, Park Ram 41, 24969; dam, Brien's 33, 27183.
 3rd. Samuel Bailey, Bailey's 259; sire, Garne 56, 24808; dam, Bailey's 173, 28426.
 4th. Samuel Bailey, Bailey's 260; sire, Garne 56, 24808; dam, Bailey's 106, 24379.

Wether, under 1 year. Eleven entries.

- 1st. E. Brien & Son, Brien's 160; sire, Park Ram, 41, 24969; dam, Brien's 21, 24743.
 2nd. Samuel Bailey, Bailey's 261; sire, Garne 56, 24808; dam, Rawling 443, 18823.
 3rd. E. Brien & Son, Brien's 161; sire, Park Ram 41, 24969; dam, Brien's 21, 24743.
 4th. Snell & Lyons, Snelgrove, R. P. Snell's 847; sire, Garne's 346, 19038; dam, J. V. Snell 16, 18055.
 5th. E. Brien & Son, Brien's 162; sire, Park Ram 41, 24969; dam, Brien's 34, 27184.

Three Wethers, under 1 year. Four entries.

- 1st. E. Brien & Son, Ridgetown. 3rd. Snell & Lyons, Snelgrove
 2nd. Samuel Bailey, Forest. 4th. E. F. Park, Burgessville.

Three Ewes, under 1 year. Five entries.

- 1st. Snell & Lyons, Snelgrove. 3rd. E. Brien & Son, Ridgetown.
 2nd. Samuel Bailey, Forest. 4th. E. F. Park, Burgessville.

LINCOLNS.

Ewe, under 1 year. Two entries.

- 1st. L. Parkinson, Eramosa, Parkinson's 469, 13683; sire, Charleton's 67, 9852; dam, Parkinson's 357, 11183.
 2nd. L. Parkinson, Eramosa, Parkinson's 470, 13684; sire, Dudding's 265, 11154; dam, Millie 4th, 4383.

Wether, 1 year and under 2. Three entries.

- 1st. L. Parkinson, Eramosa, Sammy John; sire, Dudding's 324, 11153; dam, Parkinson's 117, 6792.
 2nd. L. Parkinson, Dick; sire, Dudding's 324, 11153; dam, Parkinson's 187, 6802.
 3rd. L. Parkinson, Mounce; sire, Dudding's 265, 11154; dam, Lib 4th, 6652.

Wether, under 1 year. Three entries.

- 1st. L. Parkinson, Peter; sire, Gibson's 48, 8531; dam, Duffield's 13, 7334.
 2nd. L. Parkinson, Fred; sire, Charlton's 67, 9852; dam, Parkinson's 180, 6795.
 3rd. L. Parkinson, Willie; sire, Charlton's 67, 9852; dam, Parkinson's 172, 6787.

Three Wethers, under 1 year. Two entries.

- 1st. L. Parkinson, Eramosa. 2nd. L. Parkinson, Eramosa.

Three Ewes under 1 year. Two entries.

- 1st. L. Parkinson, Eramosa. 2nd. L. Parkinson, Eramosa.

LEICESTERS.

Ewe under 1 year. Eleven entries.

- 1st. Hastings Bros., Crosshill, Primrose Rook, 8371; sire, Thompson's George, 7198; dam, Beach Emma, 5419.
 2nd. A. W. Smith, Maple Lodge, Maple Lodge Minnie 13th, 8305; sire, Winchester, 205, 6713; dam, M. L. Minnie 4th, 5056.
 3rd. A. & W. Whitelaw, Guelph, Lilly Annison, 8385; sire, Pictston Hill, 7794; dam, Mary Annison 2nd, 2490.
 4th. A. & W. Whitelaw, Guelph, Robina W. 2nd, 8384; sire, Remus, 5980; dam, Jenny Berry 3rd, 5735.
 5th. G. & W. Parkinson, Eramosa, (Emma); sire, Jerry 4th, 7605; dam, Murial Boyd 5th, 4206.

Wether 1 year and under 2. Eight entries.

- 1st. Hastings Bros., Crosshill, K. Snadd; sire, Romulus, 5979; dam, Miss TeWitt, 4911.
 2nd. A. & W. Whitelaw, Guelph, Billie W.; sire, Remus, 5980; dam, Daisy of Guelph, 5410.
 3rd. John Kelly, Shakespeare, Tom; sire, Agamemnon, 5723; dam, Miss Stuck.
 4th. John Orr, Galt, Hero, 8791; sire, Linden, 4145; dam, Polly, 2571.
 5th. Hastings Bros., Crosshill, K's Grey; sire, Agamemnon, 5723; dam, Miss Stuck.

Wether under 1 year. Eleven entries.

- 1st. G. & W. Parkinson, Eramosa, Bobs; sire, Jerry 4th, 7605; dam, Baleria Boyd 2nd, 3057.
 2nd. John Kelly, Shakespeare, Ted; sire, Dan Patch, 7577; dam, Black Spot, 3729.
 3rd. John Orr, Galt, Rob Roy, 8786; sire, Vanguard 2nd, 7326; dam, Lottie, 4456.
 4th. A. W. Smith, Maple Lodge, Canopy; sire, Borden W., 7838; dam, Lavinia E., 3209.
 5th. Hastings Bros., Crosshill, George Hastings, 8667; sire, Thompson's George, 7198; dam, Lady Hill 3rd, 6631.

Three Wethers under 1 year. Three entries.

- 1st. John Orr, Galt. 2nd. Hastings Bros., Crosshill.

Three Ewes under 1 year. Five entries.

- 1st. A. & W. Whitelaw, Guelph. 4th. G. & W. Parkinson, Eramosa.
 2nd. A. W. Smith, Maple Lodge. 5th. John Orr, Galt.
 3rd. Hastings Bros., Crosshill.

OXFORDS.

Ewe, under 1 year. Eighteen entries.

- 1st. J. W. Lee & Sons, Simcoe, Lee's Ewe, 107, 35205; sire, Kelmscotinian 52, 30521; dam, Chunk 4th, 25682.
 2nd. Wm. Brien & Son, Ridgetown, Ridgetown Pride 6th; sire, Snobelin 10th, 32692; dam, Brien's 10, 20155.
 3rd. J. W. Lee & Son, Simcoe, Lee's Ewe 102, 35200; sire, Kelmscotinian 52, 30521; dam, Maria 2nd, 21867.

Wether, 1 year and under 2. Seven entries.

- 1st. J. W. Lee & Sons, Simcoe, Kelm 115, 35845; sire, Kelmscotinian 52, 30521; dam, Sweet Bramble, 21828.
- 2nd. W. E. Wright, Glanworth, Famosa Dandy, 35800.
- 3rd. J. W. Lee & Son, Simcoe, Kelm 114, 35844; sire, Kelmscotinian 52, 30521; dam, Prime, 21831.
- 4th. W. E. Wright, Glanworth, Jull's 465, 35711.

Wether under 1 year. Ten entries.

- 1st. W. E. Wright, Glanworth, Summerhill King 98, 35714.
- 2nd. W. E. Wright, Glanworth, Summerhill King 99, 35715.
- 3rd. W. E. Wright, Glanworth, Summerhill King 100, 35716.
- 4th. J. W. Lee & Sons, Simcoe, Kelm 117, 35847; sire, Kelmscotinian 52, 30521; dam, Belle 4th, 27642.
- 5th. And. Elliott, Pond Mills, A. E. 200; sire, Pond Mills 92, 21522; dam, Pond Mills 65, 18900.

Three Wethers under 1 year. Three entries.

- 1st. W. E. Wright, Glanworth.
- 3rd. And. Elliott, Pond Mills.
- 2nd. J. W. Lee & Sons, Simcoe.

Three Ewes under 1 year. Seven entries.

- 1st. J. W. Lee & Sons, Simcoe.
- 4th. A. Stevenson, Atwood.
- 2nd. Alex. Stewart, Livings Springs.
- 5th. J. W. Lee & Sons, Simcoe.
- 3rd. Wm. Brien & Son, Ridgetown.

SHROPSHIRE.

Ewe under 1 year. Thirteen entries.

- 1st. John Campbell, Woodville, Campbell's 1362, 218601; sire, Royal President, 183915; dam, Campbell's 1237, 204567.
- 2nd. W. C. Edwards & Co., Rockland.
- 3rd. W. C. Edwards & Co., Rockland.
- 4th. John Campbell, Woodville, Campbell's 1388, 218084; sire, Fairstar Rose, 145189; dam, Campbell's 1137, 176405.
- 5th. W. C. Edwards & Co., Rockland, Edwards 865, 219099; sire, Bachelor, 205634; dam, Edward's 759, 205432.

Wether 1 year and under 2. Thirteen entries.

- 1st. John Campbell, Woodville, McK's 42, 204382; sire, Rare Chance, 191158; dam, Campbell's 1062, 147263.
- 2nd. W. C. Edwards & Co., Rockland, Edward's 778, 221330; sire, Merry Dreamer, 150567; dam, Hagar's 535, 151043.
- 3rd. Lloyd-Jones Bros., Burford, Gibson's 883, 204825; sire, Ruddington Masterpiece, 194066; dam, Gibson's 686, 176457.
- 4th. John Campbell, Woodville, Campbell's 1306, 204946; sire, Shenston's Star, 183913; dam, Campbell's 1024, 144570.
- 5th. John Campbell, Woodville, Campbell's 1312, 204306; sire, Royal President, 183915; dam, Campbell's 1193, 183901.

Wether under 1 year. Fourteen entries.

- 1st. W. C. Edwards & Co., Rockland, Edward's 912, 220985.
- 2nd. John Campbell, Woodville, No. 2; sire, Manchester's Cambric, 183912; dam, Campbell's 980, 160396.
- 3rd. W. E. Wright, Glanworth, Wright's 530, 220538.
- 4th. John Campbell, No. 4; sire, Rare Chance, 191158; dam, Campbell's 1062, 147263.
- 5th. John Campbell, Woodville, No. 3; sire, Corneils Columbus, 186223; dam, McKague's 2, 161994.

Three Wethers under 1 year. Six entries.

- 1st. John Campbell, Woodville.
- 4th. W. E. Wright, Glanworth.
- 2nd. W. C. Edwards & Co., Rockland.
- 5th. John Campbell, Woodville.
- 3rd. Lloyd-Jones Bros., Burford.

Three Ewes under 1 year. Six entries.

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| 1st. W. C. Edwards & Co., Rockland. | 4th. W. D. Monkman, Bond Head. |
| 2nd. John Campbell, Woodville. | 5th. A. Rudell, Hespeler. |
| 3rd. Lloyd-Jones Bros., Burford. | |

SOUTHDOWNS.

Ewe under 1 year. Eight entries.

- 1st. Sir Geo. Drummond, Beaconsfield, Que., Drummond's 1029, 19698, sire, Sandringham 32, 16401; dam, Drummond 582, 17005.
- 2nd. J. Jackson & Son, Abingdon, Jackson's Ewe 1D, 19852; sire, Babraham Example, 17513; dam, Jackson's Ewe 103B, 14343.
- 3rd. Sir Geo. Drummond, Beaconsfield, Que., Drummond 1000, 19697; sire, Sandringham 32, 16401; dam, Drummond's 649, 17027.
- 4th. J. Jackson & Son, Abingdon, Jackson's Ewe 7D., 19853; sire, Babraham Example, 17513; dam, Jackson's Ewe 3C., 14488.
- 5th. Sir Geo. Drummond, Beaconsfield, Que., Drummond's 979, 19696; sire, Sandringham 32, 16401; dam, Drummond 328, 12708.

Wether 1 year and under 2. Five entries.

- 1st. Sir Geo. Drummond, Beaconsfield, Drummond 885, 18467; sire, Babraham Colonel 16400; dam, Drummond 47, 12627.
- 2nd. Sir Geo. Drummond, Beaconsfield, Drummond 900, 18470; sire, Union Jack, 13822; dam, Drummond 393, 14384.
- 3rd. J. Jackson & Son, Abingdon, Jackson's 53; sire, Babraham Example, 17513; dam, Jackson's Ewe 26C., 16966.
- 4th. J. Jackson & Son, Abingdon, Jackson's 68; sire, Jackson's 15, 16959; dam, Jackson's Ewe 16C., 15568.

Wether under 1 year. Six entries.

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| 1st. Sir Geo. Drummond, Drummond 981, 19876. | 4th. Telfer Bros., Paris. |
| 2nd. Sir Geo. Drummond, Drummond 989, 19877. | 5th. Telfer Bros., Paris. |
| 3rd. Sir Geo. Drummond, Drummond 1034, 19879. | |

2 Wethers under 1 year. Four entries.

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| 1st. Sir Geo. Drummond, Beaconsfield, Que. | 2nd. Sir Geo. Drummond. |
| 3rd. John Jackson & Son, Abingdon. | 4th. Telfer Bros., Paris. |

Three Ewes under 1 Year. Three entries.

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| 1st. Sir Geo. Drummond, Beaconsfield, Que. | 3rd. Telfer Bros., Paris. |
| 2nd. John Jackson & Son, Abingdon. | |

DORSETS.

Ewe under 1 Year. Six entries.

- 1st. R. H. Harding, Thorndale, Tranquility, 4509; sire, Empey's 69, 3333; dam, Linden Rose, 1794.
- 2nd. John Hunter, Wyoming, Little Minnie, 4750; sire, Jake, 3363; dam, Flora, 1265.
- 3rd. R. H. Harding, Tranquility, 4511; sire, Empey's 69, 3333; dam, Linden Rose, 818.
- 4th. R. H. Harding, Belle Star, 4864; sire, King Hardy, 3297; dam, Betsy Jane, 2959.
- 5th. Jas. Robertson & Sons, Milton, Holmstead Lilly, 927; sire, Wolborough Royal, 738; dam, Hamstead Lass, 870.

Wether 1 year and under 2. Eight entries.

- 1st. R. H. Harding, Fred, 4026; sire, Dundonald, 3848; dam, McLee's 39, 1484.
- 2nd. Hastings Bros., Crosshill, Fairmount Louis, 928; sire, Martin's Best, 916; dam, Harding's 40, 467.
- 3rd. R. H. Harding, Frisco, 4030; sire, Dundonald, 3848; dam, McLee's 4, 1692.
- 4th. John Hunter, Wyoming, Dan; sire, Jake, 3363; dam, Hunter's 32, 2481.
- 5th. John Hunter, Wyoming, Jim; sire, Jake, 3363; dam, Stella, 1153.

Wether under 1 year. Eight entries.

- 1st. R. H. Harding, Dick 1st, 4897; sire, Bailett's Best, 9204; dam, B. & L. 11, 2921.
 2nd. R. H. Harding, Patsy, 4918; sire, Tranquility, 2083; dam, Perfection 3rd, 1787.
 3rd. Jas. Robertson & Sons, Milton, Holmstead Bill; sire, Wolborough Royal, 738; dam, Holmstead Girl, 871.
 4th. Jas. Robertson & Son, Milton, Holmstead Barney; sire, Wolborough Royal, 738; dam, Holmstead Girl, 871.
 5th. John Hunter, Wyoming, Bob; sire, Jake, 3363; dam, Hunter's 58, 3954.

Three Wethers under 1 year. Four entries.

- 1st. R. H. Harding, Thorndale. 3rd. John Hunter, Wyoming.
 2nd. Jas. Robertson & Sons, Milton. 4th. John Hunter, Wyoming.

HAMPSHIRE OR SUFFOLK.

Ewe under 1 year. Six entries.

- 1st. John Kelly, Shakespeare, Beatrice, 11594; sire, High Clear Bagle, 3877; dam, Winnie, 6425.
 2nd. John Kelly, Belinda, 11595; sire, High Clear Bagle, 3877; dam, Winnie, 6425.
 3rd. Telfer Bros., Paris, Telfer Ewe, 11571; sire, Shifford, 4111; dam, Telfer Ewe, 8700.
 4th. Telfer Bros., Paris, Telfer Ewe, 11572; sire, Shifford, 4111; dam, Shifford, 9640.
 5th. Jas. Bowman, Guelph, Bowman's 28; sire, Bowman's 636; dam, Bowman's 731.

Wether 1 year and under 2. Two entries.

- 1st. Jas. Bowman, Bowman's 88; sire, Burnham's 121-R, 622; dam, W. R. B., 693.
 2nd. Jas. Bowman, Guelph, Bowman's 87; sire, Stewart's 763; dam, W. R. B., 610.

Wether under 1 year. Three entries.

- 1st. John Kelly, Black Bill; sire, High Clear Bagle, 3877; dam, B. 1, 5405.
 2nd. Jas. Bowman, Guelph, Bowman's 57; sire, Stewart's 763; dam, W. R. B., 610.
 3rd. Jas. Bowman, Guelph, Bowman's 59; sire, Stewart's 763; dam, W. R. B., 760.

GRADES OR CROSSES.

Ewe, 1 year and under 2. Two entries.

- 1st. E. Brien & Son, Ridgetown. 2nd. John Campbell, Woodville.

Wether, 1 year and under 2. Fourteen entries.

- 1st. John Campbell, Woodville. 4th. John Orr, Galt.
 2nd. L. Parkinson, Eramosa. 5th. Hastings Bros., Crosshill.
 3rd. Hastings Bros., Crosshill.

Three Wethers under 1 year. Eleven entries.

- 1st. John Orr, Galt. 4th. L. Parkinson, Eramosa.
 2nd. John Campbell, Woodville. 5th. Hastings Bros., Crosshill.
 3rd. R. J. Stone, Stonington, Ills.

Wether under 1 year. Twenty-six entries.

- 1st. L. Parkinson, Eramosa. 4th. John Kelly, Shakespeare.
 2nd. John Orr, Galt. 5th. John Campbell, Woodville.
 3rd. John Campbell, Woodville.

Ewe under 1 year. Six entries.

- 1st. John Orr, Galt. 4th. L. Parkinson, Eramosa.
 2nd. Hastings Bros., Crosshill. 5th. G. & W. Parkinson, Eramosa.
 3rd. John Campbell, Woodville.

Ewe or Wether under 2 years. Seven entries.

- 1st. John Campbell, Woodville. 2nd. L. Parkinson, Eramosa.

Pen of Four Lambs, Pure-bred, Grade or Cross.

- 1st. Sir Geo. Drummond, Beaconsfield.

Fat Sheep, Bred and Owned by Resident in County of Wellington. Five entries.

1st. G. & W. Parkinson, Eramosa. 2nd. A. & W. Whitelaw, Guelph.

Pen of Three Leicester Ewe Lambs.

1st. G. & W. Parkinson, Eramosa.

OXFORD DOWN SPECIAL PRIZES.

Yearling Wether. Seven entries.

1st. J. W. Lee & Sons, Simcoe. 2nd. W. E. Wright, Glanworth. 3rd. W. E. Wright.

Lamb Wether. Eight entries.

1st. W. E. Wright, Glanworth. 2nd. W. E. Wright. 3rd. W. E. Wright.

Ewe Lamb. Twelve entries.

1st. J. W. Lee & Son, Simcoe. 2nd. Wm. Brien & Son, Ridgetown. 3rd. J. W. Lee & Son.

Pen of Three Wether Lambs. Three entries.

1st. W. E. Wright. 2nd. J. W. Lee & Sons. 3rd. And. Elliott, Pond Mills.

Pen of Three Ewe Lambs. Seven entries.

1st. J. W. Lee & Sons. 2nd. Alex. Stewart, Living Springs. 3rd. Wm. Brien & Son, Ridgetown.

Yearling Wether Carcasses. Six entries.

1st. And. Elliott, Pond Mills. 2nd. W. E. Wright, Glanworth.

Lamb Wether Carcass. Six entries.

1st. W. E. Wright, Glanworth. 2nd. W. E. Wright, Glanworth.

SHROPSHIRE SPECIAL PRIZES.

Wether, 1 year and under 2. Thirteen entries.

1st. John Campbell, Woodville. 3rd. Lloyd-Jones Bros., Burford.
2nd. W. C. Edwards & Co., Rockland.

Wether under 1 year. Thirteen entries.

1st. W. C. Edwards & Co. 2nd. John Campbell. 3rd. W. E. Wright, Glanworth.

Three Registered Wether Lambs. Seven entries.

1st. John Campbell. 2nd. W. C. Edwards & Co. 3rd. Lloyd-Jones Bros.

Grade Wether, 1 year old, Sired by registered Shropshire Ram. Three entries

1st. John Campbell. 2nd. Lloyd-Jones Bros. 3rd. John Campbell.

Grade Wether Lamb, by registered Shropshire Ram. Seventeen entries.

1st. John Campbell. 2nd. Lloyd-Jones Bros. 3rd. John Campbell.

SOUTHDOWN SPECIAL PRIZES.

Ewe under 1 year. Eight entries.

1st. Sir Geo. Drummond. 2nd. John Jackson, Abingdon. 3rd. Sir Geo. Drummond.

Pen of Three Ewes under 1 year. Four entries.

1st. Sir Geo. Drummond. 2nd. John Jackson & Son. 3rd. Telfer Bros., Paris.

Pen of Three Ewe Lambs, bred by Exhibitor, get of one Ram. Three entries

1st. Sir Geo. Drummond. 2nd. John Jackson & Son. 3rd. Telfer Bros.

Wether, 1 year and under 2 Five entries.

1st. Sir Geo. Drummond. 2nd. Sir Geo. Drummond. 3rd. John Jackson & Son.

Wether under 1 year. Eight entries.

1st. Sir Geo. Drummond. 2nd. Sir Geo. Drummond. 3rd. Sir Geo. Drummond.

Pen of Three Wethers under 1 year. Four entries.

1st. Sir Geo. Drummond. 2nd. Sir Geo. Drummond. 3rd. John Jackson & Son.

DRESSED CARCASSES.

Cotswold Dressed Carcass Wether, 1 year and under 2. Five entries.

1st. S. Bailey, Forest. 3rd. E. Brien & Son, Ridgetown.
2nd. E. Brien & Son, Ridgetown. 4th. S. Bailey, Forest.

Cotswold Dressed Carcass Wether under 1 year. Four entries.

1st. E. Brien & Son, Ridgetown. 3rd. S. Bailey, Forest.
2nd. E. Brien & Son, Ridgetown. 4th. E. F. Park, Burgessville.

Lincoln Dressed Carcass Wether, 1 year and under 2. Two entries.

1st. L. Parkinson, Eramosa. 2nd. L. Parkinson, Eramosa.

Lincoln Dressed Carcass Wether, under 1 year. Two entries.

1st. L. Parkinson, Eramosa. 2nd. L. Parkinson, Eramosa.

Leicester Dressed Carcass Wether, 1 year and under 2. Six entries.

1st. A. & W. Whitelaw, Guelph. 3rd. John Kelly, Shakespeare.
2nd. A. W. Smith, Maple Lodge. 4th. A. & W. Whitelaw, Guelph.

Leicester Dressed Carcass under 1 year. Three entries.

1st. Hastings Bros., Crosshill. 2nd. John Orr, Galt. 3rd. John Orr, Galt.

Oxford Dressed Carcass Wether, 1 year and under 2. Seven entries.

1st. And. Elliott, Pond Mills. 4th. W. E. Wright, Glanworth.
2nd. W. E. Wright, Glanworth. 5th. J. W. Lee & Sons, Simcoe.
3rd. E. Brien & Son, Ridgetown.

Oxford Dressed Carcass Wether under 1 year. Eight entries.

1st. W. E. Wright, Glanworth. 4th. And. Elliott, Pond Mills.
2nd. W. E. Wright, Glanworth. 5th. And. Elliott, Pond Mills.
3rd. J. W. Lee & Sons, Simcoe.

Shropshire Dressed Carcass Wether, 1 year and under 2. Six entries.

1st. W. D. Monkman, Bond Head. 4th. Lloyd-Jones Bros., Burford.
2nd. R. Gibson, Delaware. 5th. W. C. Edwards & Co., Rockland.
3rd. W. E. Wright, Glanworth.

Shropshire Dressed Carcass Wether under 1 year. Six entries.

1st. W. E. Wright, Glanworth. 4th. W. E. Wright, Glanworth.
2nd. Lloyd-Jones Bros., Burford. 5th. John Campbell, Woodville.
3rd. A. G. H. Luxton, Milton.

Southdown Dressed Carcass Wether, 1 year and under 2. Two entries.

1st. John Jackson & Son, Abingdon. 2nd. John Jackson & Son, Abingdon.

Southdown Dressed Carcass Wether under 1 year. Three entries.

1st. John Jackson & Son, Abingdon. 2nd. John Jackson & Son, Abingdon.

Dorset Dressed Carcass Wether, 1 year and under 2. Four entries.

1st. R. H. Harding, Thorndale. 3rd. A. G. H. Luxton, Milton.
2nd. A. G. H. Luxton, Milton. 4th. John Hunter, Wyoming.

Dorset Dressed Carcass Wether under 1 year. Four entries.

1st. John Hunter, Wyoming. 3rd. Jas. Robertson & Son, Milton.
2nd. R. H. Harding, Thorndale.

Grade or Cross Dressed Carcass Wether, 1 year and under 2. Six entries.

1st. E. Brien & Son, Ridgetown.
2nd. A. Rudell, Hespeler.

3rd. A. Rudell, Hespeler.
4th. W. E. Wright, Glanworth.

Grade or Cross Dressed Carcass Wether, 1 year. Eleven entries.

1st. Rich. Gibson, Delaware.
2nd. John Campbell, Woodville.
3rd. W. E. Wright, Glanworth.

4th. Lloyd-Jones Bros., Burford.
5th. A. Rudell, Hespeler.

SWINE.

BERKSHIRES.

Barrow, 6 months and under 9. Six Entries.

1st. John Kelly, Shakespeare. Bill: sire, Durham's Sambo, 12982; dam, Shakespeare Queen, 13170.
2nd. Snell & Lyons. Snelgrove, Snelgrove Bob; sire, Baron Duke 65, 78361; dam, Snelgrove Lass, 10795.
3rd. John Kelly. Ben: sire, Durham's Sambo, 12928; dam, Shakespeare Queen, 18170.
4th. J. S. Cowan, Donegal. Fairview Boy; sire, Willow Lodge Jock, 11664; dam, Fairview Prime Rose, 12509.
5th. Snell & Lyons. Snelgrove, Snelgrove Peter; sire, Baron Duke 65, 78361; dam, Snelgrove Lass, 10795.

Barrow, under 6 months. Six entries.

1st. Snell & Lyons. Snelgrove, Snelgrove Duke; sire, Norval King, 14899; dam, Cherry Lane Queen, 10342.
2nd. John Kelly. Sandy: sire, Dragoon 2nd, 14037; dam, Shakespeare Belle, 13685.
3rd. W. J. Rudd, Eden Mills. Bob: sire, Willow Lodge Eden, 13320; dam, Rudds 18, 13999.
4th. John Kelly. Sam: sire, Dragoon 2nd, 14037; dam, Shakespeare Belle, 13685.
5th. Snell & Lyons. Snelgrove, Snelgrove Turk: sire, Norval King, 14899; dam, Cherry Lane Queen, 10342.

Sow, 9 months and under 15. Three entries.

1st. Douglas Thomson, Woodstock. Maple Lodge Ruby, 14068; sire, Longfellow 10th, 8633; dam, Belle of Milton, 5020.
2nd. Douglas Thomson, Woodstock. Maple Lodge Gyp: sire, Longfellow 10th, 8633; dam, Maple Lodge Allia, 9424.
3rd. Snell & Lyons. Snelgrove, Snelgrove Sunshine, 14904; sire, Fairview Charmer, 11626; dam, Snelgrove's Morning Mist, 11907.

Sow, 6 months and under 9. Nine entries.

1st. Douglas Thomson, Woodstock. Woodstock Lass, 14888; sire, Snelgrove Boy, 9811; dam, Fancy Maid, 14217.
2nd. John Kelly, Shakespeare. Lady Lucy, 14829; sire, Durham's Sambo, 12928; dam, Shakespeare Queen, 13170.
3rd. Douglas Thomson, Woodstock. Woodstock Lady, 14889; sire, Snelgrove Boy, 9811; dam, Fancy Maid, 14217.
4th. Douglas Thomson, Woodstock. Woodstock Belle, 14887; sire, Snelgrove Boy 9811; dam, Fancy Maid, 14217.
5th. Douglas Thomson, Woodstock. Maple Lodge Lizzie, 14454; sire, Maple Lodge Leader, 11941; dam, Stratton Lizzie, 8630.

Sow, under 6 months. Eight entries.

1st. Douglas Thomson, Woodstock. Maple Lodge Kitty: sire, Myrtle's Prince, 14133; dam, Maple Lodge Daisy, 13792.
2nd. J. S. Cowan, Donegal. Fairview Matchless, 14917; sire, Just the Thing, 13566; dam, Fairview Choice, 11627.
3rd. Douglas Thomson, Woodstock. Maple Lodge Kitty 2nd: sire, Polgate Doctor, 14684; dam, Belle of Milton, 5020.
4th. John Kelly, Shakespeare. Duchess, 14827; sire, Dragoon 2nd, 14037; dam, Shakespeare Belle, 13685.
5th. J. S. Cowan, Donegal. Fairview Fashion, 14946; sire, Just the Thing, 13566; dam, Fairview Choice, 11627.

Three pigs, offspring of one sow, bred by exhibitor. Five entries.

1st Douglas Thomson, Woodstock.

3rd. J. S. Cowan, Donegal.

2nd. John Kelly, Shakespeare.

4th. John Kelly, Shakespeare.

YORKSHIRES.

Barrow, 6 months and under 9. Four entries.

1st. J. Featherston & Son, Streetsville, Pine Grove Exhibit; sire, Broomhouse Beau, 14514; dam, Pine Grove Missabella, 13756.

2nd. R. F. Duck & Son, Port Credit, Jack 1st; sire, Lakeview Jap. 16017; dam, Lakeview Queen 3rd, 15912.

3rd. R. F. Duck & Son, Port Credit, Jack 2nd; sire, Lakeview Jap. 16017; dam, Lakeview Queen 3rd, 15912.

4th. J. Featherston & Son, Streetsville, Pine Grove Exhibit No. 2; sire, Broomhouse Beau, 14514; dam, Pine Grove Missabella, 13756.

Barrow under 6 months. Three entries.

1st. R. F. Duck & Son, Port Credit, Bob; sire, Pine Grove Fluster, 13917; dam, Silver Locks 2nd, 13309.

2nd. J. Featherston & Son, Streetsville, Pine Grove Exhibit No. 3; sire, Broomhouse Beau, 14514; dam, Pine Grove Tindella 2nd, 6737.

3rd. R. J. Kerr, Mimosa, Maple Hurst Prince; sire, Maple Hurst King, 13632; dam, Maple Hurst Royal Queen 5th, 10975.

Sow, 9 months and under 15. Ten entries.

1st. R. F. Duck & Son, Port Credit, Lakeview Jean, 17700; sire, Lakeview Jap, 16017; dam, Lakeview Queen 3rd, 15912.

2nd. J. Featherston & Son, Streetsville, Pine Grove Misabella 3rd, 17778; sire, Broomhouse Beau, 14514; dam, Pine Grove Misabella, 13756.

3rd. Jas. Wilson & Sons, Fergus, Monkland Lassie, 16950; sire, Oak Lodge Pinkerton 7th, 6457; dam, Monkland Betty 4th, 13402.

4th. R. J. Kerr, Mimosa, Lakeview Susie, 16226; sire, O. L. Metchley 20, 13125; dam, O. L. Cecelia, 4728.

5th. J. E. Brethour, Burford, O. L. Queen Bess 84th, 17744; sire, Holywell Cardiff, 9230; dam, O. L. Queen Bess 60, 14329.

6th. R. F. Duck & Son, Port Credit, Lakeview Jean 2nd, 17701; sire, Lakeview Jap, 16017; dam, Lakeview Queen 3rd, 15912.

Sow, 6 months and under 9. Nineteen entries.

1st. J. E. Brethour, Burford, O. L. Queen Bess 86, 17746; sire, O. L. Chancellor, 6582; dam, O. L. Queen Bess 602, 14329.

2nd. J. E. Brethour, Burford, O. L. Lady Frost 2nd, 17733; sire, O. L. Chancellor, 6582; dam, Dalmeny Lady Frost 22nd, 14784.

3rd. J. Featherston & Son, Streetsville, Pine Grove Misabella 4th, 17779; sire, Broomhouse Beau, 14514; dam, Pine Grove Misabella, 13756.

4th. J. Featherston & Son, Streetsville, Pine Grove Misabella 5th, 17780; sire, Broomhouse Beau, 14514; dam, Pine Grove Misabella, 13756.

5th. R. F. Duck & Son, Port Credit, Lakeview Flossie, 17698; sire, Lakeview Jap, 16017; dam, Lakeview Queen 3rd, 15912.

6th. J. E. Brethour, Burford, O. L. Pride 97, 17743; sire, Dalmeny D. C., 14778; dam, O. L. Pride 86, 16318.

Sow under 6 months. Thirteen entries.

1st. J. Featherston & Son, Streetsville, Pine Grove Dalmeny Jess; sire, Dalmeny Joe, 13577; dam, Pine Grove Fame 6th, 11098.

2nd. J. E. Brethour, Burford, O. L. Princess 24, 17735; sire, O. L. Cid 2nd, 16614; dam, O. L. Princess 4th, 15442.

3rd. J. E. Brethour, Burford, O. L. Princess 25th, 17736; sire, O. L. Cid 2nd, 16614; dam, O. L. Princess 4th, 15442.

4th. J. E. Brethour, Burford, O. L. Princess 26th, 17737; sire, O. L. Cid 2nd, 16614; dam, O. L. Princess 4th, 15442.

5th. J. E. Brethour, Burford, O. L. Cinderella 185, 17723; sire, O. L. Park Royal, 16609; dam, O. L. Cinderella 149, 14321.

6th. R. F. Duck & Son, Port Credit, Lakeview Pearl, 17702; sire, Pine Grove Fluster, 13917; dam, Silver Locks 2nd, 13309.

Three pigs, the offspring of one sow, bred by exhibitor.

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| 1st. J. Featherston & Son, Streetsville. | 3rd. R. F. Duck & Son, Port Credit. |
| 2nd. J. E. Brethour, Burford. | 4th. J. E. Brethour, Burford. |

TAMWORTHS.

Barrow 6 months and under 9. Four entries.

- 1st. D. Douglas & Sons, Mitchell, Maplehurst Jack; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.
- 2nd. D. Douglas & Son, Mitchell, Maplehurst Tom; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.
- 3rd. D. Douglas & Son, Mitchell, Maplehurst Bill; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.
- 4th. Chas. Currie, Morriston, Nelson; sire, Newcastle Choice, 3415; dam, Daisy, 3500.

Barrow under 6 months. Six entries.

- 1st. D. Douglas & Sons, Mitchell, Maplehurst Sam; sire, Maplehurst Leader, 3905; dam, Little Jess, 4025.
- 2nd. Chas. Currie, Morriston, Edward; sire, Newcastle Choice, 3415; dam, Highland Lassie, 3102.
- 3rd. A. C. Hallman, Breslau, Marquis; sire, Hilton Emigrant, 4051; dam, Glenside Jane, 3920.
- 4th. Chas. Currie, Morriston, Edwin; sire, Newcastle Choice, 3415; Highland Lassie, 3102.
- 5th. D. Douglas & Sons, Mitchell, Maplehurst Bob; sire, Maplehurst Leader, 3905; dam, Little Jess, 4025.
- 6th. A. C. Hallman, Breslau, Sandy; sire, Hilton Emigrant, 4051; dam, Glenside Jane, 3920.

Sow, 9 months and under 15. Four entries.

- 1st. D. Douglas & Sons, Mitchell, Maplehurst Ideal, 4335; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.
- 2nd. D. Douglas & Sons, Mitchell, Maplehurst Belle, 4336; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.
- 3rd. Chas. Currie, Morriston, Morriston Madam, 4355; sire, Newcastle Choice, 3415; dam, Highland Lassie, 3102.
- 4th. D. Douglas & Sons, Mitchell, Flora, 4334; sire, Maplehurst Leader, 3905; dam, Elsia, 3062.

Sow, 6 months and under 9. Nine entries.

- 1st. D. Douglas & Sons, Mitchell, Maplehurst Favorite, 4339; sire, Ralph, 1384; dam, Model Queen, 3064.
- 2nd. Chas. Currie, Morriston, Morriston Lousia; sire, Newcastle Choice, 3415; dam, Daisy, 3500.
- 3rd. D. Douglas & Sons, Daisy; 4340; sire, Ralph, 1384; dam, Model Queen, 3064.
- 4th. Chas. Currie, Morriston, Morriston Lizzie, 4353; sire, Newcastle Choice, 3415; dam, Daisy, 3500.
- 5th. A. C. Hallman, Breslau, Matchless Susie, 4372; sire, Clifford King, 4036; dam, Whiteacre, 2588.
- 6th. A. C. Hallman, Breslau, Spring Brook Ida, 4369; sire, British King 2nd, 4075; dam, Glenside Lylock, 3918.

Sow, under 6 months. Six entries.

- 1st. Chas. Currie, Morriston, Morriston Alma, 4352; sire, Newcastle Choice, 3415; dam, Highland Lassie, 3102.
- 2nd. D. Douglas & Sons, Mitchell, Pride of Maplehurst, 4345; sire, Maplehurst Leader, 3905; dam, Little Jess, 4025.
- 3rd. D. Douglas & Sons, Mitchell, Sal, 4344; sire, Maplehurst Leader, 3905; dam, Little Jess, 4025.
- 4th. A. C. Hallman, Breslau, Springbrook Rose, 4365; sire, Hilton Emigrant, 4051; dam, Glenside J., 3920.

- 5th. Chas. Currie, Morriston, Morriston Susie, 4357; sire, Newcastle Choice, 3415; dam Highland Lassie, 3102.
 6th. Chas. Currie, Morriston, Morriston Eosie, 4356; sire, Newcastle Choice, 3415; dam, Highland Lassie, 3102.

Three pigs, the offspring of one sow, bred by exhibitor.

- 1st. D. Douglas & Son. 2nd. D. Douglas & Son. 3rd. Chas. Currie.

CHESTER WHITES.

Barrow, 6 months and under 9. Three entries.

- 1st. Daniel DeCourcy, Bornholm, Samie; sire, Thorndale, 2484; dam, Long Mag, 2126.
 2nd. W. E. Wright, Glanworth, Billy; sire, Sunnyside Boy 2561; dam, Blossom, 1704.
 3rd. W. E. Wright, Glanworth, Joe; sire, Sunnyside Boy, 2561; dam, Blossom, 1704.

Barrow, under 6 months. Four entries.

- 1st. Daniel DeCourcy, Bornholm, Ned; sire, Conqueror, 2039; dam, Miss Buller, 1428.
 2nd. W. E. Wright, Glanworth, Jim; sire, Cedar Grove King, 2713; dam, Susy, 1423.
 3rd. W. E. Wright, Glanworth, Tom; sire, Cedar Grove King, 2713; dam, Susy, 1423.

Sow, 9 months and under 15. Two entries.

- 1st. Daniel DeCourcy, Bornholm, Lady D., 3189; sire, Bornholm King, 2209; dam, Perth Bienty, 2503.
 2nd. W. E. Wright, Glanworth, Snowdrop 2nd, 3461; sire, Cedar Grove King, 2713; dam, Susie, 1423.

Sow, 6 months and under 9. Four entries.

- 1st. W. E. Wright, Dot, 3455; sire, Sunnyside Boy, 2561; dam, Blossom, 1704.
 2nd. D. DeCourcy, Tessie, 3369; sire, Thorndale, 2484; dam, Long Mag, 2126.
 3rd. W. E. Wright, Nellie, 3460; sire, Sunnyside Boy, 2561; dam, Blossom, 1704.

Sow, under 6 months. Three entries.

- 1st. D. DeCourcy, Ann, 3411; sire, Conqueror, 2139; dam, Miss Buller, 1428.
 2nd. D. DeCourcy, Mag, 3410; sire, Conqueror, 2139; dam, Miss Buller, 1428.
 3rd. W. E. Wright, Fanny, 3458; sire, Cedar Grove King, 2713; dam, Susie, 1423.

Three pigs, the offspring of one sow, bred by exhibitor. Four entries.

- 1st. D. DeCourcy, Bornholm. 2nd. W. E. Wright, Glanworth.

ANY OTHER BREED, GRADE OR CROSS.

Barrow, 6 months and under 9. Six entries.

- 1st. Jas. Featherston & Son, Streetsville. 3rd. A. E. Hulet, Norwich.
 2nd. H. Koelln, Glen Allan. 4th. Chas. Currie, Morriston.

Barrow under 6 months. Nine entries.

- 1st. Snell & Lyons, Snelgrove. 4th. J. Featherston & Son, Streetsville.
 2nd. D. DeCourcy, Bornholm. 5th. Chas. Currie, Morriston.
 3rd. D. Douglas & Sons, Mitchell.

Sow, 6 months and under 9. Eight entries.

- 1st. H. Koelln, Glen Allan. 4th. J. Featherston & Sons, Streetsville.
 2nd. A. E. Hulet, Norwich. 5th. Chas. Currie, Morriston.
 3rd. H. Koelln, Glen Allan. 6th. J. Featherston & Sons, Streetsville.

Sow under 6 months. Six entries.

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| 1st. J. Featherston & Son, Streetsville. | 3rd. Daniel DeCourcy, Bornholm. |
| 2nd. J. Featherston & Son, Streetsville. | 4th. Chas. Currie, Morriston. |

BACON HOGS.

Two Pure Bred Export Bacon Hogs. Twenty-seven entries.

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| 1st. J. E. Brethour, Burford. | 7th. J. Featherston & Son, Streetsville. |
| 2nd. Jas. Wilson & Son, Fergus. | 8th. J. E. Brethour, Burford. |
| 3rd. R. F. Duck & Son, Port Credit. | 9th. J. Featherston & Son, Streetsville. |
| 4th. R. F. Duck & Son, Port Credit. | 10th. R. F. Duck & Son, Port Credit. |
| 5th. J. E. Brethour, Burford. | 11th. J. Featherston & Son, Streetsville. |
| 6th. Jas. Wilson & Son, Fergus. | |

Two Grade or Cross Brad Export Bacon Hogs. Sixteen entries.

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| 1st. R. F. Duck & Son, Port Credit. | 5th. A. E. Hulett, Norwich. |
| 2nd. J. Featherston & Son, Streetsville. | 6th. A. E. Hulett, Norwich. |
| 3rd. Jas. Rettie, Norwich. | 7th. H. Koelln, Glen Allan. |
| 4th. J. Featherston & Son, Streetsville. | |

Two best Export Bacon Hogs. Twelve Entries.

- 1st. J. E. Brethour, Burford.

Two Pure Bred Bacon Hogs, Dressed Carcasses. Twenty-two entries.

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| 1st. J. E. Brethour, Burford. | 6th. Chas. Wilson & Son, Fergus. |
| 2nd. Jas. Wilson & Son, Fergus. | 7th. J. Featherston & Son, Streetsville. |
| 3rd. J. E. Brethour, Burford. | 8th. R. F. Duck & Son, Port Credit. |
| 4th. J. E. Brethour, Burford. | 9th. J. Featherston & Son, Streetsville. |
| 5th. Chas. Currie, Morriston. | 10th. R. F. Duck & Son, Port Credit. |

Grade or Cross Bred Bacon Hogs, Dressed Carcasses. Fourteen entries.

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| 1st. J. Featherston & Son, Streetsville. | 5th. Jas. Rettie, Norwich. |
| 2nd. Jas. Rettie, Norwich. | 6th. P. D. Ede, Oxford Centre. |
| 3rd. J. Featherston & Son, Streetsville. | 7th. Chas. Currie, Morriston. |
| 4th. Chas. Currie, Morriston. | |

Best Two Dressed Carcasses, Bacon Hogs. Sixteen Entries.

- 1st. J. E. Brethour, Burford.

Pen of Four Bacon Hogs, Any Breed, Grade or Cross. Twelve entries.

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| 1st. J. E. Brethour, Burford. | 2nd. R. F. Duck & Son, Port Credit. |
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DAIRY TEST.

Name of Cow and Owner.

	Lbs. Milk.	Per cent Fat.	Lbs. Fat.	Lbs. Solids, not Fat.	Pts. for Day's Milk.	Pts. for Fat.	Pts. for Solids, not Fat.	Total Points
Class 11, Section 1.—Shorthorn cow, 36 months and over—								
1st, Canadian Queen, J. W. Armstrong, Speedside.....	108.56	3.7	4.01	10.60	.....	80.20	42.40	122.60
Class 11, Section 2.—Shorthorn heifer, under 36 months								
1st, Duchess of Bonnie Doon, L. D. Currie, Hillsburg.....	79.13	3.05	2.40	7.38	1.	48.	29.52	78.52
Class 12, Section 1.—Ayrshire cow, 36 months and over—								
1st, Annie-Laurie of Norval, H. & J. McKee, Norwich.....	109.88	4.2	4.60	10.04	.....	92.	40.16	132.16
2nd, Sarah 2nd, H. & J. McKee, Norwich.....	104.81	4.15	4.34	10.24	.....	80.80	40.96	127.76
3rd, Annette, W. M. Smith, Scotland.....	91.24	4.5	4.10	9.20	4.	82.	36.80	122.80
4th, Paddy of Hickory Hill, N. Dymont, Clappison.....	92.01	3.7	3.44	8.79	2.	68.80	35.16	105.96
5th, Spirituly, H. & J. McKee.....	86.89	4.	3.17	8.18	.....	63.40	32.72	102.12
Class 12, Section 2.—Ayrshire heifer, under 36 months—								
1st, Scotch Lassie, W. M. Smith, Scotland.....	63.06	3.7	2.33	6.15	3.	16.60	24.60	74.20
2nd, Queenie, C. S. Aylwin, Freeman.....	66.58	4.3	2.42	5.55	.....	18.40	22.20	70.60
3rd, Belle, A. E. Hulet, Norwich.....	50.36	3.8	2.29	5.84	.....	45.80	23.36	69.16
4th, Pat of Hickory Hill, N. Dymont, Clappison.....	49.75	4.1	2.01	4.56	10.	40.20	18.24	68.44
5th, Bonnie Jessie, W. M. Smith, Scotland.....	55.69	3.8	2.07	5.31	1.	41.40	21.24	63.64
Class 13, Section 1.—Holstein cow, 36 months and over—								
1st, Adelaide Brook de Kol, Geo. Rice, Tillsenburgh.....	126.51	3.6	4.53	12.03	.....	90.60	48.12	138.72
2nd, Favorite 7th, Jas. Rettie, Norwich.....	120.81	3.2	3.80	11.15	6.	76.	44.60	126.60
3rd, Ladoga Idealine, Jas. Rettie, Norwich.....	110.61	3.7	4.08	10.28	.....	81.60	41.12	122.72
4th, Beauty Buffalo Girl, P. D. Ede, Oxford Centre.....	117.51	3.3	3.85	11.09	.....	77.00	44.36	121.36
Class 13, Section 2.—Holstein heifer under 36 months—								
1st, Pontje Peiterje de Kol, Geo. Rice, Tillsenburgh.....	103.26	3.7	3.80	9.15	7.	76.	36.60	119.60
2nd, Winnie E. Countess, Geo. Rice, Tillsenburgh.....	106.76	3.2	3.41	10.03	.....	68.20	40.12	108.32
3rd, De Kol Pauline Sadie Vale, Jas. Rettie, Norwich.....	67.81	3.9	2.67	6.34	10.	53.40	25.36	88.76
4th, Madam E. A. E. Hulet, Norwich.....	83.81	2.9	2.47	7.28	.....	49.40	29.12	78.52
5th, Frances 2nd, P. D. Ede, Oxford Centre.....	83.37	3.	2.49	7.07	.....	49.80	28.28	78.08
Class 14, Section 1.—Jersey cow, 36 months and over—								
1st, Lady Norval, S. J. Lyons, Norval.....	66.33	4.	2.63	5.72	.....	52.60	22.88	75.48
2nd, Jessie, J. Lawrence, Oxford Centre.....	42.70	5.	2.12	4.20	6.	12.10	17.16	65.56
3rd, J. Lind, J. Lawrence, Oxford Centre.....	57.81	5.4	2.01	3.75	10.	40.20	15.	65.20
Class 14, Section 2.—Jersey heifer, under 36 months—								
1st, Charlotte of Norval, S. J. Lyons, Norval.....	37.21	4.5	1.67	3.43	1.	33.40	13.72	48.12
Class 15, Section 1.—Grade cow, 36 months and over—								
1st, Pearl, P. D. Ede, Oxford Centre.....	109.39	3.7	4.03	9.73	.....	80.60	36.92	117.52
2nd, Percy, Geo. Rice, Tillsenburgh.....	80.56	3.7	2.97	7.08	.....	59.40	30.72	90.12
3rd, Irene, J. Lawrence, Oxford Centre.....	67.33	4.7	3.19	6.51	.....	63.80	26.04	89.84
Class 15, Section 2.—Grade heifer under 36 months—								
1st, Bessie, Jas. Rettie, Norwich.....	83.15	3.5	2.86	7.24	.....	57.20	28.96	86.16

JUDGING COMPETITION.

BEEF CATTLE.—*Highest possible score, 100.*

1st. J. Bracken	94	6th. W. C. Morgan	86
2nd. H. A. Craig	93	7th. J. A. Clark	83
3rd. R. S. Hamer	92	8th. D. G. Salkeld	82
4th. M. W. Meek	88	9th. Robert Longley	81
5th. R. W. Mills	87	10th. W. C. Owen	80

DAIRY CATTLE.—*Highest possible score, 200.*

1st. G. E. Saunders	196	6th. R. R. Wheaton } tie	168
2nd. Geo. R. Bell	185	H. H. Colwell }	
3rd. A. McLaren	182	8th. A. E. Slater	160
4th. C. E. Smith	178	9th. H. Barton } tie	157
5th. Chas. C. Nixon	171	C. A. Row }	

SHEEP.—*Highest possible score, 200.*

1st. J. A. Clark	187	6th. W. A. Barnett } tie	131
2nd. G. G. White	173	J. D. Brien }	
3rd. K. G. McKay	158	P. M. Ballantyne }	
4th. H. B. Smith	136	9th. J. A. Telfer	130
5th. W. A. Munro	132	10th. C. F. McEwen	129

SWINE.—*Highest possible score, 200.*

1st. J. D. Gilmour	185	6th. W. E. Walker	152
2nd. J. E. Jewson	163	7th. W. H. Young	148
3rd. A. E. Slater	159	8th. C. A. Row	145
4th. L. A. Bowes	158	9th. A. W. Sirett	136
5th. R. Hodson	157	10th. J. Bracken	132

SEED DEPARTMENT.

FALL WHEAT.

1st. Water Hartman, Clarksburg.	3rd. Neil Sangster, Avonbank.
2nd. C. R. Gies, Heidelberg.	

SPRING WHEAT.

1st. Walter Hartman, Clarksburg.

GOOSE WHEAT.

1st. A. R. Wood, Fergus.	3rd. Edward Buckland, Fergus.
2nd. Thomas Lush, Oustic.	4th. Robert Talbot, Everton.

OATS, WHITE.

1st. Thomas Lush, Oustic.	3rd. Albert Pav. St. Catharines.
2nd. Robert Talbot, Everton.	4th. John Orr, Galt.

OATS, BLACK.

1st. Thomas Lush, Oustic.

BARLEY, 6-ROWED.

1st. Robert Talbot, Everton.

FIELD PEAS, WHITE.

1st. Edward Buckland, Fergus.	2nd. Thomas Lush, Oustic.
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RED CLOVER.

1st. W. M. Smith, Scotland
16a L.S.

ALSIKE.

1st. W. M. Smith, Scotland.

TIMOTHY.

1st. Walter Hartman, Clarksburg.

CORN, FLINT IN THE EAR.

1st. H. Smith, Ruthven.

3rd. L. D. Hankinson, Grovesend.

2nd. Albert Pay, St. Catharines.

4th. W. B. Roberts, Sparta.

CORN, DENT IN THE EAR.

1st. G. B. Coatsworth, Kingsville.

3rd. G. M. Wigle, Ruthven.

2nd. Charles Ure, Windsor.

FALL WHEAT, HAND SELECTED, SEED OF 1ST AND 2ND YEAR.

1st. C. R. Gies, Heidelberg.

2nd. Neil Stevenson, Avonbank.

FALL WHEAT, GROUP EXHIBIT.

1st. C. R. Gies, Heidelberg.

2nd. Neil Stevenson, Avonbank.

SPRING WHEAT, HAND SELECTED, SEED OF 1ST AND 2ND YEARS.

2nd. Robert McKay, Maxville.

SPRING WHEAT, GROUP EXHIBITS.

2nd. Robert McKay, Maxville.

OATS, HAND-SELECTED SEED OF 1ST AND 2ND YEAR.

1st. D. Carmichael, Jr., West Lorne.

3rd. W. L. Dixon, Dromore

2nd. A. McTaggart, Guelph.

OATS, GROUP EXHIBITS.

1st. David Prouse, Goderich.

2nd. W. L. Dixon, Dromore.

SIX-ROWED BARLEY, HAND SELECTED SEED OF 1ST AND 2ND YEAR.

1st D. Carmichael, Jr., West Lorne.

SIX-ROWED BARLEY, GROUP EXHIBITS.

1st D. Carmichael, Jr., West Lorne.

CORN, 10 EARS, ANY VARIETY FLINT, WHITE.

1st. Geo. W. Ryckman, McNab.

3rd. Jas. M. McCormack, Rockton.

2nd. W. J. Campbell, Snelgrove.

4th. Albert Pay, St. Catharines.

CORN, 10 EARS, ANY VARIETY FLINT, YELLOW.

1st. W. J. Campbell, Snelgrove.

3rd. Jas. Robertson & Sons, Milton.

2nd L. D. Hankinson, Grovesend.

CORN, 10 EARS, ANY VARIETY DENT, WHITE, (WHITE-CAP YELLOW).

1st. H. Smith, Ruthven.

3rd. Albert Pay, St. Catharines.

2nd. Joseph Thomas, Blytheswood.

CORN, 10 EARS, ANY VARIETY DENT, YELLOW.

1st. G. W. Coatsworth, Kingsville.

3rd. A. Van Sickie, Onandaga.

2nd. Z. Wigle, Ruthven.

CORN, 10 EARS, ANY VARIETY SWEET.

1st. J. O. Duke, Ruthven.

3rd. Albert Pay, St. Catharines.

2nd. H. & J. McKee, Norwich.

POULTRY.

BRAHMAS, LIGHT.

Cocks, 15.—1st, Geo. A. Tossey; 2nd, C. P. Brown; 3rd, W. B. Nantel; 4th, John A. Belford.
Hens, 13.—1st, and 2nd, Geo. A. Tossey; 3rd, Jno. A. Belford; 4th, Chas. LaRose.
Cockerels, 13.—1st, C P Brown; 2nd, W. B. Nantel; 3rd, and 4th, Geo. A. Tossey
Pullets, 14.—1st, C. P. Brown; 2nd, A. C. Miller; 3rd, Geo. A. Tossey; 4th, Chas. LaRose.

BRAHMAS, DARK.

Cocks, 5.—1st, C. A. R. Tilt; 2nd, L. C. Sage; 3rd, J. W. Nixon.
Hens, 6.—1st, L. C. Sage; 2nd, Geo. W. Irwin; 3rd, W. B. Nantel.
Cockerels, 7.—1st, C. A. R. Tilt; 2nd and 3rd, L. C. Sage.
Pullets, 6.—1st and 3rd, L. C. Sage; 2nd, C. A. R. Tilt.

COCHINS, BUFF.

Cocks, 6.—1st, Hugh Wyatt; 2nd, W. B. Nantel; 3rd, Geo. W. Irwin.
Hens, 7.—1st and 2nd, Hugh Wyatt; 3rd, W. B. Nantel.
Cockerels, 6.—1st, 2nd and 3rd, Hugh Wyatt.
Pullets, 7.—1st, 2nd and 3rd, Hugh Wyatt.

COCHINS, PARTRIDGE.

Cocks, 3.—1st, R. Oke; 2nd, F. Wales; 3rd, W. B. Nantel.
Hens, 2.—1st, R. Oke; 2nd, F. Wales.
Cockerels, 2.—1st, R. Oke; 2nd, F. Wales.
Pullets, 2.—1st, R. Oke; 2nd, F. Wales.

COCHINS, BLACK.

Cocks, 2.—1st, L. Glanwith; 2nd, R. B. Millard.
Hens, 3.—1st, J. W. Nixon & Co.; 2nd, L. Glanwith; 3rd, A. & T. Readwin.
Cockerels, 4.—1st and 2nd, R. B. Millard; 3rd, W. B. Nantel.
Pullets, 4.—1st and 2nd, R. B. Millard; 3rd, W. B. Nantel.

COCHINS, WHITE.

Cocks, 1.—1st, W. B. Nantel.
Hens, 3.—1st, W. B. Nantel; 2nd, A. & T. Readwin; 3rd, J. W. Nixon & Co.
Cockerel, 1.—1st, W. B. Nantel.
Pullets 1.—1st, W. B. Nantel.

LANGSHANS, BLACK.

Cocks, 6.—1st, C. A. R. Tilt; 2nd, R. McCurdy; 3rd, C. A. R. Tilt.
Hens, 9.—1st, C. A. R. Tilt; 2nd and 3rd, R. McCurdy.
Cockerel, 11.—1st and 2nd, C. A. R. Tilt; 3rd, R. McCurdy.
Pullets, 13.—1st and 2nd, R. McCurdy; 3rd and 4th, C. A. R. Tilt.

LANGSHANS, WHITE.

Cocks, 4.—1st, W. J. Teal; 2nd and 3rd, I. T. Knight.
Hens, 5.—1st and 3rd, Jas Philpot & Son; 2nd, W. J. Teale.
Cockerels, 3.—1st, Jas Philpot & Son; 2nd and 3rd, W. A. Teale.
Pullets, 3.—1st and 2nd, W. J. Teale; 3rd, Jas. Philpot & Son.

BARRED PLYMOUTH ROCKS.

Cocks, 30.—1st, Jas. R. Balfour; 2nd, 4th, 6th and 8th, I. K. Millard; 3rd, 7th and 10th, N. Cosh; 5th and 9th, J. R. Boyce; 7th, R. Houston.
Hens, 31.—1st and 4th, N. Cosh; 2nd, 9th and 10th, I. K. Millard; 3rd, J. R. Boyce; 5th, F. W. Krouse; 6th, W. Oakley; 7th, Jas. R. Balfour; 8th, Chas. Hockin.
Cockerels, 51.—1st, N. Cosh; 2nd, 4th and 6th, J. R. Boyce; 3rd, W. Oakley; 5th, Chas. Hockin; 7th and 9th, Jno. Bedford; 8th, Jas. R. Balfour; 10th, Dr. D. Marr.
Pullets, 55.—1st, John Pringle; 2nd, I. K. Millard; 3rd and 10th, N. Cosh; 4th and 9th, Chas. Hockin; 5th and 8th, J. R. Boyce; 6th, Jas. R. Balfour; 7th, J. E. Mounce.

WHITE PLYMOUTH ROCKS.

- Cocks*, 24.—1st, F. Westbury; 2nd, Daly and Dill; 3rd, H. H. Wallace; 4th, W. H. Bessey; 5th, Golden Kennels & Poultry Co.
Hens, 31.—1st, Daly & Dill; 2nd, 3rd and 5th, A. G. Brown; 4th, Jas. E. Hamilton; 6th, H. H. Wallace; 7th and 8th, Geo. A. Robertson; 9th, W. H. Bessey; 10th, F. Westbury.
Cockerels, 31.—1st, 4th and 7th, Daly & Dill; 2nd, Jos. Foster; 3rd, H. H. Wallace; 5th, W. H. Bessey; 6th; A. G. Brown; 8th, G. E. Munroe; 9th, F. Berner; 10th, Sholdice & Sage.
Pullets, 34.—1st H. H. Wallace; 2nd, 3rd and 4th, Daly & Dill; 5th, F. Westbury; 6th, W. H. Bessey; 7th and 8th, D. J. Schelley; 9th, J. A. Carroll; 10th, A. G. Brown.

BUFF PLYMOUTH ROCKS.

- Cocks*, 7.—1st, J. R. Boyce; 2nd, John Bawden; 3rd, J. R. Boyce.
Hens, 3.—1st, J. R. Boyce; 2nd J. R. Boyce; 3rd, J. A. Harron.
Cockerels, 8.—1st, John Bawden; 2nd, John Bawden; 3rd, J. R. Boyce.
Pullets, 8.—1st and 3rd, John Bawden; 2nd and 4th, J. R. Boyce.

GOLDEN-LACED WYANDOTTES.

- Cocks* 6.—1st, P. Daly; 2nd, J. H. Magill; 3rd, W. Lemon.
Hens, 7.—1st, J. H. Magill; 2nd, A. W. Graham; 3rd, P. Daly.
Cockerels, 9.—1st, J. H. Magill; 2nd, W. Lemon; 3rd, J. H. Magill.
Pullets, 10.—1st, W. Lemon; 2nd, Jos. Postlethwaite; 3rd, J. H. Magill.

SILVER-LACED WYANDOTTES.

- Cocks*, 10.—1st, Alf. Flawn; 2nd, W. Lemon; 3rd, Henderson & Billing.
Hens, 9.—1st and 2nd, Jas. Arthur; 3rd, W. Lemon.
Cockerels, 12.—1st, 2nd and 4th, Jas. Arthur; 3rd, W. Lemon.
Pullets, 12.—1st, W. Lemon; 2nd, 3rd and 4th, Jas. Arthur.

BLACK WYANDOTTES.

- Cocks*, 2.—1st, F. McDonell; 2nd, F. McDonell.
Hens, 6.—1st, G. & J. Bogue; 2nd, I. T. Knight; 3rd, A. & T. Readwin.
Cockerels, 3.—1st, G. & J. Bogue; 2nd, F. McDonell; 3rd, F. McDonell.
Pullets, 7.—1st, G. & J. Bogue; 2nd, F. McDonell; 3rd, A. & T. Readwin.

BUFF WYANDOTTES.

- Cocks*, 9.—1st, S. T. Bartlett; 2nd, C. J. Packham; 3rd, Jas. Dundas.
Hens, 21.—1st, S. T. Bartlett; 2nd and 4th, S. T. Bartlett; 3rd, Jas. Dundas; 5th, Spry & Mick.
Cockerels, 16.—1st, S. T. Bartlett; 2nd and 4th, Jas. Dundas; 3rd, C. J. Packham.
Pullets, 20.—1st and 2nd, S. T. Bartlett; 3rd and 4th, C. J. Packham; 5th, Jas. Dundas.

WHITE WYANDOTTES.

- Cocks*, 42.—1st, 3rd and 6th, J. S. Martin; 2nd, W. H. Fairley; 4th, Slessor & McCracken; 5th and 10th, Chas. Massie; 7th, N. T. Kettlewell; 8th, Wright Bros.; 9th, G. A. Black.
Hens, 51.—1st, J. A. Carroll; 2nd, Wm. Wilson; 3rd and 5th, Chas. Massie; 4th, J. W. Nixon; 6th, 7th and 9th, J. S. Martin; 8th, N. T. Kettlewell; 10th, W. Dawson.
Cockerels, 68.—1st and 5th, J. S. Martin; 2nd, Wm. Wilson; 3rd, Chas. Massie; 4th, J. A. Carroll; 6th, Daly & Dill; 7th, O. E. Culbert; 8th, G. A. Black; 9th, Lew Smith; 10th, John Coulter.
Pullets, 74.—1st and 2nd, J. S. Martin; 3rd, E. H. Eidt; 4th, Wm. Wilson; 5th, L. H. Baldwin; 6th, L. H. Baldwin; 7th, Lew Smith; 8th, G. A. Black; 9th, J. Coulter; 10th, O. E. Culbert.

PARTRIDGE WYANDOTTES.

- Cocks*, 4.—1st, L. C. Sage; 2nd, T. H. Scott; 3rd, F. W. Krouse.
Hens, 4.—1st, Alf. Flawn; 2nd and 3rd, T. H. Scott.
Cockerels, 4.—1st, L. C. Sage; 2nd, J. W. Nixon & Co.; 3rd, Rev. A. Graham.
Pullets, 5.—1st, L. C. Sage; 2nd, F. W. Krouse; 3rd, J. W. Nixon & Co.

COLUMBIAN WYANDOTTES.

Cocks, 1.—1st, T. H. Scott

Hens, 2.—1st and 2nd, T. H. Scott.

Cockerels, 3.—1st, W. C. Pranschke; 2nd and 3rd, T. H. Scott.

Pullets, 4.—1st and 4th, W. C. Pranschke; 2nd and 3rd, T. H. Scott.

DOMINIKES.

Cocks, 3.—1st, G. & J. Bogue; 2nd, M. T. Burn & Son; 3rd, G. B. Corbert.

Hens, 4.—1st and 2nd, G. B. Corbert; 3rd, M. T. Burn & Son.

Cockerels, 2.—1st, G. B. Corbert; 2nd, M. T. Burn & Son.

Pullets, 4.—1st, G. B. Corbert; 2nd and 3rd, M. T. Burn & Son.

BLACK JAVAS.

Cocks, 5.—1st, C. J. Daniels; 2nd, R. Oke; 3rd, G. & J. Bogue

Hens, 5.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, W. H. Reid.

Cockerels, 3.—1st, G. & J. Bogue; 2nd, R. Oke.

Pullets, 5.—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, W. H. Reid.

A. O. C. JAVAS.

Cocks, 2.—1st, R. Oke.

Hens, 4.—1st, R. Oke; 2nd, W. H. Reid; 3rd, G. & J. Bogue.

Cockerels, 3.—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, W. H. Reid.

Pullets, 4.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, W. H. Reid.

BLACK RED GAME.

Cocks, 5.—1st and 2nd, W. H. Butler; 3rd, C. R. Crowe.

Hens, 5.—1st, 2nd and 3rd, W. H. Butler.

Cockerels, 7.—1st, W. H. Butler; 2nd and 3rd, W. H. Butler.

Pullets, 6.—1st and 3rd, W. H. Butler; 2nd, J. W. Roberts.

BROWN RED GAME.

Cocks, 3.—1st, W. J. Teale; 2nd, Wm. Barber & Co.; 3rd, Telfer Bros.

Hens, 5.—1st, 2nd and 3rd, J. W. Teale.

Cockerels, 5.—1st and 3rd, Wm. Barber & Co.; 2nd, Tyson & McMaster.

Pullets, 4.—1st, Tyson & McMaster; 2nd and 3rd, Wm. Barber & Co.

DUCKWING GAME.

Cocks, 4.—1st and 3rd, Wm. Barber & Co.; 2nd, J. Philpot & Son.

Hens, 5.—1st and 2nd, Wm. Barber & Co.; 3rd, J. Philpot & Son.

Cockerels, 5.—1st, Geo. Colwell; 2nd, Telfer Bros.; 3rd, Wm. Barber & Co.

Pullets, 2.—1st, Jas. Philpot & Son; 2nd, Wm. Barber & Co.

PILE GAME.

Cocks, 7.—1st, T. Sherlock; 2nd, J. Philpot & Son; 3rd, Telfer Bros.

Hens, 8.—1st and 2nd, T. Sherlock; 3rd, Telfer Bros.

Cockerels, 5.—1st, T. Sherlock; 2nd and 3rd, J. B. Swaffield.

Pullets, 5.—1st and 3rd, T. Sherlock; 2nd, Telfer Bros.

INDIAN GAME.

Cocks, 8.—1st, Chas. LaRose; 2nd, J. W. Nixon Co.; 3rd, J. A. Carroll.

Hens, 8.—1st, J. A. Carroll; 2nd, Chas. LaRose; 3rd, J. W. Nixon Co.

Cockerels, 10.—1st, Wm. Doubt; 2nd, J. A. Carroll; 3rd, J. W. Nixon Co.

Pullets, 9.—1st and 2nd, J. W. Nixon Co.; 3rd, Wm. Doubt.

BLACK SUMATRA GAME.

Cocks, 4.—1st, G. & J. Bogue; 2nd, M. T. Burn & Son.

Hens, 3.—1st, C. J. Daniels; 2nd, W. H. Reid

Cockerels, 6.—1st and 2nd, Fred. W. King; 3rd, G. & J. Bogue.

Pullets, 3.—1st, G. & J. Bogue

A. O. V. GAME.

Cocks, 2.—1st, M. T. Burn & Son; 2nd Telfer Bros.
Hens, 6.—1st and 2nd, Wm. Barber & Co.; 3rd, W. J. Teale.
Cockerels, 5.—1st and 2nd, Wm. Barber & Co.; 3rd, T. Finn.
Pullets, 4.—1st, Wm. Barber & Co.; 2nd, M. T. Burn & Son; 3rd, T. Finn.

WHITE R. C. LEGHORNS.

Cocks, 6.—1st, M. R. Hoover; 2nd, W. C. Wilson & Son; 3rd, T. Finn.
Hens, 4.—1st, Steffler & Burns; 2nd, M. R. Hoover; 3rd, T. Finn.
Cockerels, 10.—1st, M. R. Hoover; 2nd and 3rd, W. J. Bell.
Pullets, 15.—1st, M. R. Hoover; 2nd, Geo. Wood; 3rd, Steffler & Burns.

S. C. WHITE LEGHORNS.

Cocks, 17.—1st, Dr. R. C. Coates; 2nd, F. Wales; 3rd, F. McNiven; 4th, Dr. R. C. Coates; 5th, W. J. Fullerton.
Hens, 24.—1st and 4th, F. Wales; 2nd, Dr. R. C. Coates; 3rd, F. McNiven; 5th, J. E. Hussey.
Cockerels, 26.—1st, J. R. Laidlaw; 2nd, F. Wales; 3rd, J. E. Hussey; 4th, Dr. R. C. Coates; 5th, Morrow & Rice.
Pullets, 29.—1st and 3rd, Dr. R. C. Coates; 2nd, Rev. A. Graham; 4th, F. Wales; 5th, W. J. Fullerton.

BLACK LEGHORNS.

Cocks, 7.—1st, A. & T. Readwin; 2nd, F. W. Hodgkin; 3rd, W. M. Osborne.
Hens, 7.—1st, W. M. Osborne; 2nd and 3rd, A. E. Doan.
Cockerels, 12.—1st, A. E. Doan; 2nd, W. M. Osborne; 3rd, W. M. Osborne.
Pullets, 9.—1st, A. E. Doan; 2nd and 3rd, W. M. Osborne.

R. C. BROWN LEGHORNS.

Cocks, 6.—1st, T. J. Conley; 2nd, Wm. Cadman; 3rd, W. Lemon.
Hens, 7.—1st, Wm. Cadman; 2nd and 3rd, W. C. Wilson & Son.
Cockerels, 10.—1st, T. J. Conley; 2nd, W. C. Wilson & Son; 3rd, Wm. Cadman.
Pullets, 9.—1st, Wm. Cadman; 2nd, Jos. A. Irwin; 3rd, W. C. Wilson & Sons.

S. C. BROWN LEGHORNS.

Cocks, 9.—1st, G. G. Henderson; 2nd and 3rd, Dewar Bros.
Hens, 14.—1st, H. F. Becker; 2nd, G. G. Henderson; 3rd, W. J. Player.
Cockerels, 26.—1st, 2nd and 3rd, H. F. Becker; 4th and 5th, T. A. Thompson.
Pullets, 21.—1st, 3rd and 5th, G. G. Henderson; 2nd, H. F. Becker; 4th, Dewar Bros.

BUFF LEGHORNS.

Cocks, 7.—1st, E. Jeffries; 2nd, J. O. Allan; 3rd, N. K. Cornwall.
Hens, 9.—1st, E. Jeffries; 2nd, N. K. Cornwall; 3rd, Jas. Dundas.
Cockerels, 12.—1st, 2nd and 3rd, N. K. Cornwall.
Pullets, 11.—1st and 3rd, N. K. Cornwall; 2nd, E. Jeffries.

SPANISH.

Cocks, 4.—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, H. S. Ruby & Son.
Hens, 6.—1st and 2nd, J. H. Warrington; 3rd, G. & J. Bogue.
Cockerels, 6.—1st, W. B. Nantel; 2nd, Morrow & Rice; 3rd, J. H. Warrington.
Pullets, 5.—1st, J. H. Warrington; 2nd, Morrow & Rice; 3rd, G. & J. Bogue.

S. C. BLACK MINORCAS.

Cocks, 11.—1st and 2nd, J. H. Minshall; 3rd, T. A. Foulds.
Hens, 14.—1st and 2nd, J. H. Minshall; 3rd, C. W. P. Brock; 4th, T. A. Foulds.
Cockerels, 25.—1st and 4th, Chas. Gorvett; 2nd, J. H. Minshall; 3rd, Robt. Coates.
Pullets, 22.—1st, 2nd and 4th, J. H. Minshall; 3rd, T. A. Foulds; 5th, Chas. Gorvett.

R. C. BLACK MINORCAS.

Cocks, 3.—1st and 3rd, W. Worth; 2nd, F. P. McDonell.
Hens, 3.—1st, F. P. McDonell; 2nd and 3rd, W. Worth.
Cockerels, 11.—1st and 3rd, J. H. Minshall; 2nd, W. T. Hodgkins.
Pullets, 9.—1st, C. W. P. Brock; 2nd, J. H. Minshall; 3rd, W. Worth.

WHITE MINORCAS.

Cocks, 2.—1st and 2nd, W. M. Osborne. *Cockerels*, 1.—1st, W. M. Osborne.
Hens, 2.—1st and 2nd, W. M. Osborne. *Pullets*, 2.—1st and 2nd, W. M. Osborne.

ANDALUSIANS.

Cocks, 7.—1st, Chas. Gorvett; 2nd, Chas. LaRose; 3rd, N. Cosh.
Hens, 10.—1st and 2nd, N. Cosh; 3rd, Chas. LaRose.
Cockerels, 11.—1st and 2nd, N. Cosh; 3rd, Chas. LaRose.
Pullets, 10.—1st, N. Cosh; 2nd, Chas. LaRose; 3rd, Howard and Middlebrook.

SILVER GRAY DORKINGS.

Cocks, 5.—1st and 2nd, R. Goldie; 3rd, E. J. Wilson.
Hens, 12.—1st, R. Goldie; 2nd, Jas. McCormack; 3rd, John McKee; 4th, John McKee.
Cockerels, 13.—1st, John McKee; 2nd, Wallace McGlennon; 3rd, A. G. H. Luxton.
Pullets, 13.—1st, A. Bogue; 2nd, Jas. McCormack; 3rd, S. D. Furminger; 4th, Wallace McGlennon.

COLORED DORKINGS.

Cocks, 2.—1st, A. Bogue; 2nd, Jas. McCormack.
Hens, 3.—1st, A. Bogue; 2nd, Jas. McCormack; 3rd, J. H. Warrington.
Cockerels, 3.—1st and 2nd, Jas. McCormack; 3rd, A. Bogue.
Pullets, 3.—1st and 2nd, Jas. McCormack.

WHITE DORKINGS.

Cocks, 3.—1st and 2nd, A. Bogue; 3rd, J. H. Warrington.
Hens, 3.—1st and 2nd, A. Bogue; 3rd, J. H. Warrington.
Cockerels, 3.—1st and 2nd, A. Bogue; 3rd, J. H. Warrington.
Pullets, 3.—1st and 2nd, A. Bogue; 3rd, J. H. Warrington.

BUFF ORPINGTONS.

Cocks, 16.—1st, J. W. Clark; 2nd, H. A. Hoffman; 3rd, P. E. Aird; 4th, Chas. Massie.
Hens, 24.—1st, P. E. Aird; 2nd, Chas. Massie; 3rd, H. A. Hoffman; 4th, J. W. Clark;
 5th, Alf. Boultonbee.
Cockerels, 29.—1st, J. S. Niven; 2nd, P. E. Aird; 3rd and 4th, C. N. Blyth; 5th, J. W. Clark.
Pullets, 32.—1st, H. A. Hoffman; 2nd, P. E. Aird; 3rd, J. S. Niven; 4th, C. M. Blyth;
 5th, 6th and 9th, Alf. Boultonbee; 10th, H. A. Hoffman; 8th, Jas. Dundas; 7th, J. W. Clark.

BLACK ORPINGTONS.

Cocks, 8.—1st, C. J. Daniels; 2nd, M. H. Stroh; 3rd, Jas. R. Hamilton.
Hens, 11.—1st, H. Stroh; 2nd, H. A. Hoffman; 3rd, F. W. Krouse.
Cockerels, 10.—1st, C. J. Daniels; 2nd, E. A. Rawlings; 3rd, F. W. Krouse.
Pullets, 11.—1st, E. A. Rawlings; 2nd, Wm. Doubt; 3rd, R. W. Kemp.

A. O. C. ORPINGTONS.

Cocks, 7.—1st, J. H. Lampman; 2nd, H. A. Hoffman; 3rd, F. Chinnick.
Hens, 12.—1st and 3rd, F. Chinnick; 2nd, J. E. Meyer.
Cockerels, 7.—1st and 3rd, F. Chinnick; 2nd, J. H. Lampman.
Pullets, 10.—1st, 2nd and 3rd, F. Chinnick.

HOUDANS.

Cocks, 8.—1st, G. & J. Bogue; 2nd and 3rd, D. C. Trew.
Hens, 10.—1st and 2nd, D. C. Trew; 3rd, A. Bogue.
Cockerels, 5.—1st, D. C. Trew; 2nd, A. Bogue; 3rd, Geo. Degroff.
Pullets, 12.—1st, D. C. Trew; 2nd, G. & J. Bogue; 3rd, V. & E. Charlton.

CREVE CŒURS.

Cocks, 3.—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, F. W. King.
Hens, 4.—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, J. H. Warrington.
Cockerels, 2.—1st, R. Oke; 2nd, G. & J. Bogue.
Pullets, 2.—1st, R. Oke; 2nd, G. & J. Bogue.

LA FLECHE.

Cocks, 3.—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, R. Oke.
Hens, 3.—1st, J. H. Warrington; 2nd, G. & J. Bogue; 3rd, R. Oke.
Cockerels, 2.—1st, G. & J. Bogue; 2nd, R. Oke.
Pullets, 2.—1st, R. Oke; 2nd, G. & J. Bogue.

W. C. B. POLAND.

Cocks, 5.—1st, A. Bogue; 2nd, W. H. Bush; 3rd, Wm. McNeil.
Hens, 3.—1st, Wm. McNeil; 2nd, A. Bogue; 3rd, W. H. Bush.
Cockerels, 7.—1st, Wm. McNeil; 2nd and 3rd, W. H. Bush.
Pullets, 5.—1st, Wm. McNeil; 2nd and 3rd, W. H. Bush.

GOLDEN POLANDS.

Cocks, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Hens, 2.—1st, A. Bogue; 2nd, Wm. McNeil.
Cockerels, 2.—1st, A. Bogue; 2nd, Wm. McNeil.
Pullets, 2.—1st, Wm. McNeil; 2nd, A. Bogue.

SILVER POLANDS.

Cocks, 1.—1st, M. T. Burn & Son.
Hens, 3.—1st, A. Bogue; 2nd, G. & J. Bogue; 3rd, M. T. Burn & Son.
Cockerels, 4.—1st, G. & J. Bogue; 2nd and 3rd, M. T. Burn & Son.
Pullets, 3.—1st and 3rd, M. T. Burn & Son; 2nd, G. & J. Bogue.

WHITE POLANDS.

Cocks, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Hens, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Cockerels, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Pullets, 2.—1st, A. Bogue; 2nd, Wm. McNeil.

GOLDEN BEARDED POLANDS.

Cocks, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Hens, 3.—1st, A. Bogue; 2nd, Wm. McNeil; 3rd, Geo. W. Irwin.
Cockerels, 3.—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, A. Bogue.
Pullets, 3.—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, A. Bogue.

SILVER BEARDED POLANDS.

Cocks, 5.—1st, Wm. McNeil; 2nd, W. B. Nantel; 3rd, A. Bogue.
Hens, 5.—1st, W. B. Nantel; 2nd, Wm. McNeil; 3rd, A. Bogue.
Cockerels, 5.—1st, G. & J. Bogue; 2nd, W. B. Nantel; 3rd, Wm. McNeil.
Pullets, 4.—1st, W. B. Nantel; 2nd, Wm. McNeil; 3rd, A. Bogue.

WHITE BEARDED POLANDS.

Cocks, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Hens, 2.—1st, Wm. McNeil; 2nd, A. Bogue.
Cockerel, 1.—1st, Wm. McNeil; 2nd, A. Bogue.
Pullets, 2.—1st, A. Bogue; 2nd, Wm. McNeil.

BUFF LACED POLANDS.

Cocks, 2.—1st, Wm. McNeil; 2nd, G. & J. Bogue.
Hens, 2.—1st, G. & J. Bogue; 2nd, Wm. McNeil.
Cockerels, 2.—1st, Wm. McNeil; 2nd, G. & J. Bogue.
Pullets, 2.—G. & J. Bogue; 2nd, Wm. McNeil.

GOLDEN SPANGLED HAMBURGS

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Cockerels, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Jas. Baptie.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Jas. Baptie.

SILVER SPANGLED HAMBURGS.

Cocks, 4.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Wm. Cadman.
Hens, 4.—1st, Wm. McNeil; 2nd, Wm. Cadman; 3rd, R. Oke.
Cockerels, 3.—1st, Wm. McNeil; 2nd, Wm. Cadman; 3rd, R. Oke.
Pullets, 3.—1st, Wm. Cadman; 2nd, Wm. McNeil; 3rd, R. Oke.

GOLDEN PENCILLED HAMBURGS.

Cocks, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Hens, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Cockerels, 3.—1st, Wm. McNeil; 2nd, Chas. LaRose; 3rd, R. Oke.
Pullets, 2.—1st, Wm. McNeil; 2nd, R. Oke.

SILVER PENCILLED HAMBURGS.

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Cockerels, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Pullets, 2.—1st, R. Oke; 2nd, Wm. McNeil.

BLACK HAMBURGS.

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Cockerels, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Chas. LaRose.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Chas. LaRose.

RED CAPS.

Cocks, 5.—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, E. Wells.
Hens, 5.—1st, E. Wells; 2nd, C. J. Daniels; 3rd, J. H. Warrington.
Cockerels, 6.—1st and 2nd, G. & J. Bogue; 3rd, E. Wells.
Pullets, 6.—1st, E. Wells; 2nd and 3rd, G. & J. Bogue.

SULTANS.

Cocks, 2.—1st, G. & J. Bogue; 2nd, R. Oke.
Hens, 2.—1st, G. & J. Bogue; 2nd, R. Oke.
Cockerels, 2.—1st, G. & J. Bogue; 2nd, R. Oke.
Pullets, 2.—1st, R. Oke; 2nd, G. & J. Bogue.

SILKIES.

Cocks, 7.—1st and 2nd, Wm. McNeil; 3rd, M. T. Burn & Co.
Hens, 4.—1st and 2nd, Wm. McNeil; 3rd, H. B. Donovan.
Cockerels, 6.—1st, Wm. McNeil; 2nd, C. J. Daniels; 3rd, J. H. Warrington.
Pullets, 6.—1st and 2nd, Wm. McNeil; 3rd, C. J. Daniels.

ANY OTHER VARIETY.

Cocks, 4.—1st, S. T. Bartlett; 2nd, M. T. Burn & Son; 3rd, W. Dawson.
Hens, 2.—1st, W. Dawson; 2nd, M. T. Burn & Son.
Cockerels, 5.—1st, W. A. McMaster; 2nd, W. A. McMaster; 3rd, S. H. Smiley.
Pullets, 8.—1st, W. A. McMaster; 2nd, W. Dawson; 3rd, S. H. Smiley.

BLACK RED GAME BANTAMS.

Cocks, 12.—1st, Oakwood Farm; 2nd, C. R. Crowe; 3rd, Wm. Hammall; 4th, Wm. Barber & Co.
Hens, 13.—1st, Wm. Hammall; 2nd, 3rd and 4th, C. R. Crowe.
Cockerels, 13.—1st, 2nd and 4th, C. R. Crowe; 3rd, Wm. Barber & Co.
Pullets, 15.—1st and 4th, Wm. Barber & Co.; 2nd, C. R. Crowe; 3rd, Tyson & McMaster.

BROWN RED GAME BANTAMS.

Cocks, 3.—1st, Wm. Hammall; 2nd, J. Philpot & Son.
Hens, 7.—1st, Jas. Philpot & Son; 2nd and 3rd, Wm. Hammall.
Cockerels, 9.—1st, 2nd and 3rd, Wm. Hammall.
Pullets, 11.—1st, Rook Bros.; 2nd and 3rd, Wm. Hammall.

DUCKWING GAME BANTAMS.

Cocks, 8.—1st and 2nd, Wm Hammall; 3rd, C. R. Crowe.
Hens, 8.—1st, C. R. Crowe; 2nd, Wm. Hammall; 3rd, Wm. Barber & Co.
Cockerels, 11.—1st, Wm. Hammall; 2nd and 3rd, C. R. Crowe.
Pullets, 11.—1st, C. R. Crowe; 2nd, Spiers Bros.; 3rd, Wm. Barber & Co.

PILE GAME BANTAMS.

Cocks, 11.—1st, Tyson & McMaster; 2nd, Wm. R. Walker; 3rd, Wm. Hammall.
Hens, 13.—1st and 4th, Tyson & McMaster; 2nd, J. Philpott & Son; 3rd, Hart & Grimoldby.
Cockerels, 7.—1st, Wm. R. Walker; 2nd, Tyson & McMaster; 3rd, Wm. Barber & Co.
Pullets, 15.—1st, Tyson & McMaster; 2nd, W. H. Crowe; 3rd and 4th, Tyson & McMaster.

WHITE GAME BANTAMS.

Cocks, 3.—1st, 2nd and 3rd, H. B. Donovan.
Hens, 3.—1st, 2nd and 3rd, H. B. Donovan.
Cockerels, 6.—1st, S. D. Furminger; 2nd and 3rd, H. B. Donovan.
Pullets, 3.—1st, 2nd and 3rd, H. B. Donovan.

A. O. C. GAME BANTAM.

Cocks, 5.—1st, Rook Bros; 2nd, H. B. Donovan; 3rd, S. D. Furminger.
Hens, 6.—1st and 3rd, S. D. Furminger; 2nd, Wm. Hammall.
Cockerels, 7.—1st and 2nd, S. D. Furminger; 3rd, Rook Bros.
Pullets, 8.—1st, S. D. Furminger; 2nd, H. B. Donovan; 3rd, Rook Bros.

GOLDEN SEBRIGHT BANTAMS.

Cocks, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, C. LaRose.
Hens, 8.—1st, Wm. McNeil; 2nd, L. A. Brill; 3rd, C. LaRose.
Cockerels, 7.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Pullets, 7.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

SILVER SEBRIGHT BANTAMS.

Cocks, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Spiers Bros.
Hens, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Spiers Bros.
Cockerels, 10.—1st, Spiers Bros.; 2nd, R. Oke; 3rd, Wm. McNeil.
Pullets, 11.—1st and 2nd, Spiers Bros.; 3rd, R. Oke.

BLACK ROSE COMB BANTAMS.

Cocks, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, H. B. Donovan.
Hens, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, H. B. Donovan.
Cockerels, 9.—1st, W. H. Fairley; 2nd, R. Oke; 3rd, Slessor & McCracken.
Pullets, 7.—1st and 3rd, Slessor & McCracken; 2nd, W. H. Fairley.

WHITE ROSE COMB BANTAMS.

Cocks, 2.—1st, H. B. Donovan; 2nd, R. Oke.
Hens, 2.—1st, H. B. Donovan; 2nd, R. Oke.
Cockerels, 5.—1st, R. Oke; 2nd and 3rd, H. B. Donovan.
Pullets, 3.—1st and 2nd, W. H. Reid; 3rd, H. B. Donovan.

WHITE COCHIN BANTAMS.

Cocks, 4.—1st, Doidge & McNeil; 2nd, W. Stevenson; 3rd, Wm. McNeil.
Hens, 5.—1st, W. Stevenson; 2nd, W. E. Raymo; 3rd, Doidge & McNeil.
Cockerels, 2.—1st and 2nd, Wm. McNeil.
Pullets, 3.—1st and 3rd, Wm. McNeil; 2nd, Doidge & McNeil.

BUFF COCHIN BANTAMS.

Cocks, 8.—1st, Dewar Bros.; 2nd, Wm. McNeil; 3rd, Doidge & McNeil.
Hens, 6.—1st, Wm. McNeil; 2nd, R. Rogers; 3rd, Doidge & McNeil.
Cockerels, 6.—1st and 3rd, Wm McNeil; 2nd, R. Oke.
Pullets, 11.—1st and 2nd, Wm. McNeil; 3rd, R. Oke.

BLACK COCHIN BANTAMS.

Cocks, 4.—1st and 2nd, Doidge & McNeil; 3rd, Jas. Philpot & Son.
Hens, 4.—1st and 2nd, Doidge & McNeil; 3rd, W. E. Raymo.
Cockerels, 3.—1st and 2nd, Doidge & McNeil; 3rd, W. E. Raymo.
Pullets, 3.—1st and 2nd, Doidge & McNeil; 3rd, W. E. Raymo.

PARTRIDGE COCHIN BANTAMS.

Cocks, 3.—1st, A. W. Bell; 2nd and 3rd, R. & I. Graham.
Hens, 4.—1st, R. & I. Graham; 2nd, W. A. Bell; 3rd, R. & I. Graham.
Cockerels, 6.—1st, A. W. Bell; 2nd, W. C. Wilson & Son 3rd, A. W. Bell.
Pullets, 7.—1st and 2nd, A. W. Bell; 3rd, W. C. Wilson & Sons.

WHITE BOOTED BANTAMS.

Cocks, 2.—1st, W. H. Reid; 2nd, R. Oke.
Hens, 2.—1st, R. Oke; 2nd, W. J. Teale.
Cockerels, 4.—1st, R. Oke; 2nd and 3rd, W. J. Teale.
Pullets, 4.—1st, R. Oke; 2nd and 3rd, W. J. Teale.

BLACK-TAILED JAPANESE BANTAMS.

Cocks, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, H. B. Donovan.
Hens, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, H. B. Donovan.
Cockerels, 3.—1st, H. B. Donovan; 2nd, R. Oke; 3rd, Wm. McNeil.
Pullets, 3.—1st, R. Oke; 2nd, H. B. Donovan; 3rd, Wm. McNeil.

WHITE JAPANESE BANTAMS.

Cocks.—2nd, R. Oke.
Hens.—1st, R. Oke; 2nd, H. B. Donovan.
Cockerels.—1st, R. Oke; 2nd, H. B. Donovan.
Pullets.—1st, R. Oke; 2nd, H. B. Donovan.

BLACK JAPANESE BANTAMS.

Cocks, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, H. B. Donovan.
Hens, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, J. A. McLinnis.
Cockerels, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, H. B. Donovan.
Pullets, 3.—1st, Wm. McNeil; 2nd, H. B. Donovan; 3rd, R. Oke.

POLISH BEARDED BANTAMS.

Cocks, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Hens, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Chas. LaRose.
Cockerels, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Chas. LaRose.

POLISH UNBEARDED BANTAMS.

Cocks, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Hens, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Cockerels, 2.—1st, R. Oke; 2nd, Wm. McNeil.
Pullets, 2.—1st, R. Oke; 2nd, Wm. McNeil.

ORNAMENTAL, A. O. C. BANTAMS

Cocks, 1.—1st, H. B. Donovan.
Hens, 4.—1st, R. Oke; 2nd, H. B. Donovan; 3rd, W. E. Raymo.
Cockerels, 3.—1st, H. B. Donovan; 2nd and 3rd, W. E. Raymo.
Pullets, 4.—1st, W. E. Raymo; 2nd and 3rd, H. B. Donovan.

DORKINGS, SELLING.

Male, 4.—1st, G. & J. Bogue; 2nd, J. M. McCormack; 3rd, F. Wales.
Female, 4.—1st, Jas. McCormack; 2nd, J. A. Sheward; 3rd, G. & J. Bogue

PLYMOUTH ROCKS, SELLING.

Male, 20.—1st and 3rd, Jos. Foster; 2nd, John Bawden.

Female, 7.—1st, S. T. Bartlett; 2nd, J. E. Mounce; 3rd, Jas. McCormack.

WYANDOTTES, SELLING.

Male, 14.—1st, S. T. Bartlett; 2nd, R. Flawn; 3rd, A. W. Graham.

Female, 10.—1st, S. T. Bartlett; 2nd, C. J. Packham; 3rd, W. C. Wilson & Son.

ORPINGTONS, SELLING.

Male, 15.—1st, F. W. Krouse; 2nd, P. E. Aird; 3rd, C. M. Blyth.

Female, 2.—1st, F. W. Krouse; 2nd, F. Wales.

LEGHORNS, SELLING.

Male, 7.—1st, J. R. Laidlaw; 2nd, F. Wales; 3rd, A. E. Doan.

Female, 4.—1st, F. Wales; 2nd, A. E. Doan; 3rd, Dewar Bros.

FRENCH, SELLING.

Male, 3.—1st, G. & J. Bogue; 2nd, J. C. Wilson & Son; 3rd, R. Oke.

Female, 3.—1st, G. & J. Bogue; 2nd, R. Oke.

MINORCAS, SELLING.

Male, 8.—1st, F. Wales; 2nd, W. H. Fairley; 3rd, C. W. B. Brock.

Female, 4.—1st, E. R. Firth; 2nd, W. H. Fairley; 3rd, F. Wales.

ANY OTHER VARIETY, SELLING.

Male, 6.—1st, L. C. Sage; 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

Female, 7.—1st, Wm. McNeil; 2nd, L. C. Sage; 3rd, G. & J. Bogue.

ENGLISH PHEASANTS.

Pair.—1st, R. Goldie.

GOLDEN PHEASANTS.

Pair.—1st and 2nd, R. Goldie.

SILVER PHEASANTS.

Pair.—1st, E. J. Cuddelford; 2nd, R. Goldie.

A. O. V. PHEASANTS.

Pair.—1st, R. Goldie.

GUINEAS.

Pair.—1st, 2nd and 3rd, Elsie Davidson.

BRONZE TURKEYS. (2 YEARS.)

Cocks, 3.—1st, A. McDougall & Son; 2nd, W. J. Bell; 3rd, W. H. Beattie.

Hens, 6.—1st and 3rd, W. J. Bell; 4th, J. S. Henderson; 2nd, W. E. Wright; 5th, A. McDougall.

BRONZE TURKEYS. (UNDER 2 YEARS.)

Cocks, 7.—1st, A. McDougall; 2nd, W. J. Bell; 3rd, W. B. Nantel; 4th, J. S. Henderson; 5th, W. H. Beattie.

Hens, 7.—1st, W. H. Beattie; 2nd, R. G. Murdie; 3rd and 4th, W. J. Bell; 5th, A. McDougall.

Cockerels, 8.—1st, 3rd and 4th, W. H. Beattie; 2nd, A. McDougall; 5th, W. J. Bell.

Pullets, 7.—1st, A. McDougall; 2nd, W. J. Bell; 3rd and 5th, W. H. Beattie; 4th, W. E. Wright.

WHITE TURKEYS.

Cocks, 3.—1st and 3rd, Baker Bros.; 2nd, W. H. Beattie.

Hens, 5.—1st and 4th, Baker Bros.; 2nd and 3rd, W. H. Beattie.

Cockerels, 19.—1st, 2nd and 5th, Baker Bros.; 3rd and 4th, W. H. Beattie.

Pullets, 8.—1st and 4th, W. H. Beattie; 2nd, 3rd and 5th, Baker Bros.

A. O. V. TURKEYS.

- Cocks*, 4.—1st, W. J. Alexander; 2nd, And. Elliott; 3rd, W. H. Beattie.
Hens, 6.—1st, A. G. H. Luxton; 2nd, W. H. Beattie; 3rd, W. J. Alexander; 4th, And. Elliott; 5th, W. M. Smith.
Cockerels, 5.—1st and 5th, W. J. Alexander; 2nd and 4th, And. Elliott; 3rd, W. H. Beattie.
Pullets, 5.—1st and 4th, W. J. Alexander; 2nd, W. H. Beattie; 3rd and 5th, And. Elliott

TOULOUSE GEESE.

- Cocks*, 7.—1st, T. H. Shea; 2nd and 3rd, Geo. Colwell.
Hens, 5.—1st and 3rd, Geo. Colwell; 2nd, Scanlon Bros.
Cockerels, 9.—1st and 2nd, Geo. Colwell; 3rd, T. M. Shea; 4th, Scanlon Bros.
Cockerels, 9.—1st and 2nd, Geo. Colwell; 3rd, T. M. Shea; 4th, Scanlon Bros.

BREMEN OR EMBDEN GEESE.

- Cocks*, 7.—1st, A. McDougall & Son; 2nd, Baker Bros; 3rd, Scanlon Bros.
Hens, 7.—1st, Scanlon Bros; 2nd, M. T. Burn & Sons; 3rd, A. McDougall & Sons; 4th, Geo. Colwell.
Cockerels, 7.—1st, C. M. Blyth; 2nd, A. McDougall & Son; 3rd, Geo. Colwell.
Pullets, 6.—1st, C. M. Blyth; 2nd, A. McDougall & Son; 3rd, C. A. R. Tilt.

CHINESE GEESE.

- Cocks*, 7.—1st, W. M. Smith; 2nd, T. M. Shea; 3rd, M. T. Burn & Son.
Hens, 7.—1st, M. T. Burn & Son; 2nd, T. M. Shea; 3rd, Geo. Colwell.
Cockerels, 4.—1st, M. T. Burn & Son; 2nd, Geo. Colwell.
Pullets, 4.—1st, M. T. Burn & Son; 2nd, Geo. Colwell.

A. O. V. GEESE.

- Cocks*, 8.—1st, M. T. Burn & Son; 2nd, W. M. Smith; 3rd, Geo. Colwell.
Hens, 7.—1st, M. T. Burn & Son; 2nd, Geo. Colwell; 3rd, T. M. Shea.
Cockerels, 5.—1st, Geo. Colwell; 2nd, W. M. Smith; 3rd, Chas. Midwinter.
Pullets, 8.—1st and 3rd, Geo. Colwell; 2nd, T. M. Shea.

AYLESBURY DUCKS.

- Cocks*, 4.—1st, A. Bogue; 2nd, Geo. Colwell; 3rd, H. H. Wallace.
Hens, 5.—1st, A. Bogue; 2nd, Geo. Colwell; 3rd, H. H. Wallace.
Cockerels, 5.—1st, Geo. Colwell; 2nd, H. H. Wallace; 3rd, C. A. R. Tilt.
Pullets, 5.—1st, H. H. Wallace; 2nd, C. A. R. Tilt; 3rd, Geo. Colwell.

ROUEN DUCKS.

- Cocks*, 4.—1st, Baker Bros.; 2nd, Geo. Colwell; 3rd, A. Bogue.
Hens, 5.—1st, A. Bogue; 2nd, Baker Bros.; 3rd, Geo. Colwell.
Cockerels, 6.—1st, A. Bogue; 2nd, T. M. Shea; 3rd, Geo. Colwell.
Pullets, 7.—1st, A. Bogue; 3rd, T. M. Shea; 2nd, Jas. McCormack.

PEKIN DUCKS.

- Cocks*, 5.—1st, A. Bogue; 2nd and 3rd, C. A. R. Tilt.
Hens, 5.—1st, A. Bogue; 2nd and 3rd, C. A. R. Tilt.
Cockerels, 7.—1st, 2nd and 3rd, C. A. R. Tilt.
Pullets, 7.—1st, 2nd and 3rd, C. A. R. Tilt.

INDIAN RUNNER DUCKS.

- Cocks*, 5.—1st, Geo. Colwell; 2nd, S. D. Furminger; 3rd, T. H. Scott.
Hens, 5.—1st, T. H. Scott; 2nd and 3rd, F. W. Krouse.
Cockerels, 12.—1st and 2nd, T. H. Scott; 3rd, S. D. Furminger; 4th, F. W. Krouse
Pullets, 7.—1st, F. W. Krouse; 2nd and 3rd, T. H. Scott.

CAYUGA DUCKS.

Cocks, 2.—1st and 2nd, I. T. Knight.
Hens, 2.—1st and 2nd, I. T. Knight.
Cockerels, 9.—1st, G. & J. Bogue; 2nd, I. T. Knight; 3rd, T. M. Shea.
Pullets, 8.—1st, G. & J. Bogue; 2nd, Elsie Davidson; 3rd, I. T. Knight.

MUSCOVY DUCKS.

Cocks, 6.—1st and 3rd, Baker Bros.; 2nd, W. M. Smith.
Hens, 4.—1st, I. T. Knight; 2nd, W. M. Smith; 3rd, M. T. Burn & Son.
Cockerels, 2.—1st, M. T. Burn & Son; 2nd, W. J. Teale
Pullets, 2.—1st, W. J. Teale; 2nd, M. T. Burn & Son.

A. O. V. DUCK.

Cocks, 4.—1st and 2nd, R. Goldie; 3rd, M. T. Burn & Son.
Hens, 4.—1st and 2nd, R. Goldie; 3rd, M. T. Burn & Son.
Cockerels, 2.—1st, M. T. Burn & Son.
Pullets, 2.—1st, M. T. Burn & Son.

DRESSED POULTRY.

Pair Brahmas, 8.—1st and 2nd, J. E. Mounce; 3rd and 4th, Scanlon Bros.
Pair Cochins, 2.—1st, G. C. Hamilton; 2nd, J. E. Mounce.
Pair Langshans, 2.—1st, J. E. Mounce; 2nd, Jos. Tomlin.
Pair Plymouth Rock Cockerels, 12.—1st, 2nd and 3rd, J. E. Mounce; 4th, Hastings Bros.
Pair Plymouth Rock Pullets, 9.—1st, 2nd and 3rd, J. E. Mounce; 4th, Jos. Tomlin.
Pair Wyandotte Cockerels, 13.—1st and 3rd, W. Howard; 2nd, J. E. Mounce; 4th, Scanlon Bros.
Pair Wyandotte Pullets, 6.—1st and 2nd, J. E. Mounce; 3rd, H. J. Woodrow & Son.
Pair Minorcas or Andalusians, 5.—1st, W. H. Fairley; 2nd, Scanlon Bros.; 4th, H. J. Woodrow & Sons.
Pair Leghorns, 11.—1st, 2nd and 3rd, J. E. Mounce.
Pair Dorkings, 4.—1st and 2nd, J. E. Mounce; 3rd and 4th, Scanlon Bros.
Pair French, 1.—1st, R. Oke.
Pair Game, 2.—1st, O. J. Barber.
Pair Javas, 3.—1st and 3rd, J. E. Mounce; 2nd, Jos. Tomlin.
Pair Hamburgs, 4.—1st, R. Oke; 2nd and 3rd, Scanlon Bros.
Pair Orpingtons, 14.—1st, 2nd and 3rd, J. E. Mounce; 4th, Jos. Tomlin.
Best Pair Fowls, 8.—1st, J. E. Mounce.
Turkey, any age, Male, 6.—1st, 2nd and 3rd, H. J. Woodrow & Sons; 4th, Scanlon Bros.
Pair Turkeys, any age, Female, 7.—1st, 2nd and 3rd, H. J. Woodrow & Sons; 4th, Scanlon Bros.
Pair Turkeys, 1905, Male, 5.—1st and 2nd, H. J. Woodrow & Sons; 3rd, Scanlon Bros.; 4th, Jos. Tomlin.
Pair Turkeys, 1905, Female, 6.—1st and 4th, Scanlon Bros.; 2nd, H. J. Woodrow & Sons; 3rd, Jos. Tomlin.
Best Pair Turkeys.—H. J. Woodrow.
Pair White Geese, 7.—1st, Scanlon Bros.; 2nd and 3rd, J. E. Mounce; 4th, H. J. Woodrow & Sons.
Pair Colored Geese, 10.—1st and 4th, Scanlon Bros.; 2nd and 3rd, J. E. Mounce.
Best Pair Geese, 5.—1st, Scanlon Bros.
Pair White Ducks, 6.—1st, 2nd and 3rd, I. T. Knight; 4th, A. & T. Readwin.
Pair Colored Ducks, 7.—1st and 3rd, I. T. Knight; 2nd, H. J. Woodrow & Son.
Best Pair Ducks, 5.—1st, I. T. Knight.

COLLECTION OF FOWLS.

Six Brahmas, Cochins or Langshans.—1st, J. E. Mounce; 2nd, Scanlon Bros.; 3rd, Geo. C. Hamilton.
Six Plymouth Rocks or Wyandottes.—1st and 2nd, J. E. Mounce; 3rd and 4th, Scanlon Bros.
Six Minorcas, Andalusians or Javas.—1st, Scanlon Bros.; 2nd, Jos. Tomlin.
Six English or French.—1st and 2nd, J. E. Mounce; 3rd, Scanlon Bros.; 4th, H. J. Woodrow & Sons.

Six Games.—1st, O. J. Barber.

Six Leghorns or Hamburgs.—1st, J. E. Mounce; 2nd, Scanlon Bros.; 3rd, H. J. Woodrow & Sons; 4th, Jos. Tomlin.

Six Turkeys, 1905.—1st, H. J. Woodrow & Sons; 2nd, Scanlon Bros.; 3rd, Jos. Tomlin.

Six Geese.—1st, Scanlon Bros.; 2nd and 4th, J. E. Mounce; 3rd, H. J. Woodrow.

Six Ducks.—1st, I. T. Knight; 2nd and 4th, H. J. Woodrow; 3rd, Jos. Tomlin.

EGGS.

One Dozen White Eggs.—1st, Jos. Tomlin.

One Dozen Brown Eggs.—1st and 3rd, J. W. Krouse; 2nd, Jos. Tomlin; 4th, J. Bedford.

PIGEONS,

BLACK CARRIER.

Cocks, 5.—1st and 2nd, Geo. J. White.

Hens, 3.—1st, Geo. J. White; 2nd, W. H. Reid.

DUN CARRIER.

Cocks, 2.—1st, Geo. J. White; 2nd, Geo. J. White.

Hens, 5.—1st, C. H. Currier; 2nd, Geo. J. White.

A. O. S. C. CARRIER.

Cocks, 2.—1st and 2nd, Geo. J. White.

Hens, 3.—1st, Geo. J. White; 2nd, W. H. Reid.

Bred in 1905, 3.—1st and 2nd, Geo. J. White.

WHITE POUTER.

Cocks, 2.—1st, W. H. Reid; 2nd, C. H. Currier.

Hens, 3.—1st, L. Ridler; 2nd, C. H. Currier.

BLUE PIED POUTER.

Cocks, 3.—1st, C. H. Currier; 2nd, L. Ridler.

BLACK PIED POUTER.

Cocks, 3.—1st, C. H. Currier; 2nd, J. H. Magill.

Hens, 4.—1st, C. H. Currier; 2nd, J. H. Magill.

RED OR YELLOW POUTER.

Cocks, 2.—1st, C. H. Currier; 2nd, J. H. Magill.

Hens, 3.—1st and 2nd, C. H. Currier.

PIGMY POUTER.

Cocks, 4.—1st, J. T. Isbell; 2nd, F. A. Woodward.

Hens, 4.—1st, F. A. Woodward; 2nd, J. T. Isbell.

Bred in 1905.—1st and 2nd, J. T. Isbell.

MUFFED TUMBLER.

Cocks, 7.—1st and 2nd, Geo. J. Asman.

Hens, 7.—1st and 2nd, Geo. J. Asman.

Bred in 1905, 4.—1st and 2nd, Geo. J. Asman.

L. F., C. L. TUMBLER.

Cocks, 7.—1st and 2nd, Geo. J. Asman.

Hens, 8.—1st, Geo. J. Asman; 2nd, Geo. J. White.

Bred in 1905, 3.—1st and 2nd, Geo. J. Asman.

S. F. ALMOND TUMBLER.

Cocks, 3.—1st, Jos. A. Worthy; 2nd, W. H. Reid.
Hens, 4.—1st, Jos. A. Worthy; 2nd, W. H. Reid.

S. F. TUMBLERS, A. O. V.

Cocks, 3.—1st and 2nd, Jos. A. Worthy.
Hens, 3.—1st, Jos. A. Worthy; 2nd, W. H. Reid.
Bred in 1905, 2.—1st and 2nd, Jos. A. Worthy.

RED BARB.

Cocks, 1.—1st, Geo. J. White.
Hens, 2.—1st, Geo. J. White; 2nd, A. & T. Readwin.

BLACK BARB.

Cocks, 2.—1st, A. & T. Readwin; 2nd, Geo. J. White.
Hens, 2.—1st, A. & T. Readwin; 2nd, J. A. Hatton.

A. O. S. C. BARB.

Cocks, 3.—2nd, C. H. Currier.
Hens, 2.—1st, A. & T. Readwin; 2nd, C. H. Currier.
Bred in 1905, 2.—1st, A. & T. Readwin; 2nd, C. H. Currier.

WHITE TRUMPETER.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 3.—1st, J. H. Karn; 2nd, W. H. Reid.

A. O. S. C. TRUMPETER.

Cocks, 4.—1st, W. H. Reid; 2nd, W. J. McCormack.
Hens, 4.—1st, W. J. McCormack; 2nd, W. H. Reid.
Bred in 1905, 2.—1st, W. H. Reid.

BLACK JACOBIN.

Cocks, 6.—1st, Alf. Glenm; 2nd, R. K. Barker.
Hens, 4.—1st, A. W. Barton; 2nd, W. H. Reid.

RED OR YELLOW JACOBIN.

Cocks, 5.—1st, C. H. Currier; 2nd, R. K. Barker.
Hens, 9.—1st and 2nd, R. K. Barker.

WHITE JACOBIENS.

Cocks, 7.—1st and 2nd, A. W. Barton.
Hens, 5.—1st, A. W. Barton; 2nd, R. K. Barker.

A. O. S. C. JACOBIN.

Cocks, 5.—1st, Robt. Henry; 2nd, R. K. Barker.
Hens, 2.—1st and 2nd, R. K. Barker.
Bred in 1905, 7.—1st, C. H. Currier; 2nd, R. K. Barker.

ORIENTAL FRILLS.

Cocks, 7.—1st, F. Bell; 2nd, F. A. Woodward.
Hens, 6.—1st, W. H. Reid; 2nd, F. A. Woodward.

R. C. ANTWERP.

Cocks, 4.—1st and 2nd, A. Bunker.
Hens, 4.—1st, A. Bunker; 2nd, W. H. Reid.

SILVER DUN ANTWERP.

Cocks, 3.—1st and 2nd, W. H. Reid.

Hens, 1.—1st, W. H. Reid.

Bred in 1905.—1st, W. H. Reid.

WHITE FANTAIL.

Cocks, 8.—1st, Chas. Massie; 2nd, W. H. Reid.

Hens, 8.—1st, W. H. Reid; 2nd, L. Ridler.

BLUE OR BLACK FANTAIL.

Cocks, 8.—1st, A. & T. Readwin; 2nd, W. H. Reid.

Hens, 8.—1st, W. J. McCormack; 2nd, W. H. Reid.

A. O. S. C. FANTAIL.

Cocks, 7.—1st and 2nd, W. H. Reid.

Hens, 8.—1st, J. A. Halton; 2nd, A. & T. Readwin.

Bred in 1905.—1st, J. H. Karn; 2nd, A. & T. Readwin.

RED OR YELLOW MAGPIE.

Cocks, 4.—1st, L. Ridler; 2nd, R. E. McKinistry.

Hens, 2.—1st and 2nd, R. E. McKinistry.

A. O. C. MAGPIE.

Cocks, 5.—1st, R. E. McKinistry; 2nd, L. Ridler.

Hens, 5.—1st and 2nd, R. E. McKinistry.

Bred in 1905, 8.—1st, A. & T. Readwin; 2nd, L. Ridler.

SHOW HOMER, BLUE OR BLACK CHEQUERED.

Cocks, 2.—1st and 2nd, F. Bell.

Hens, 2.—1st and 2nd, F. Bell.

SHOW HOMER, A. O. C.

Cocks, 2.—1st and 2nd, F. Bell.

Hens, 2.—1st and 2nd, F. Bell.

Bred in 1905, 5.—1st and 2nd, F. Bell.

BLACK SWALLOW.

Cocks, 5.—1st and 2nd, A. W. Barton.

Hens, 4.—1st and 2nd, W. H. Reid.

A. O. SOLID COLOR SWALLOW.

Cocks, 5.—1st, A. W. Barton; 2nd, W. H. Reid.

Hens, 4.—1st, W. H. Reid; 2nd, A. W. Barton.

A. O. C. SWALLOW.

Cocks, 4.—1st and 2nd, W. A. Jones.

Hens, 6.—1st, W. A. Jones; 2nd, L. Ridler.

Bred in 1905, 5.—1st, A. W. Barton.

DRAGOON.

Cocks, 2.—1st and 2nd, Geo. J. White.

Hens, 2.—1st and 2nd, Geo. J. White.

Bred in 1905.—1st and 2nd, Geo. J. White.

ARCHANGEL.

Cocks, 6.—1st, C. H. Currier; 2nd, L. Ridler.

Hens, 2.—1st, J. A. Hatton; 2nd, L. Ridler.

NUN.

Cocks, 4.—1st, Chas. Massie; 2nd, W. H. Reid.
Hens, 5.—1st, A. & T. Readwin; 2nd, J. A. Hatton.

BLUE OR SILVER AFRICAN OWL.

Cock, 5.—1st, W. H. Reid; 2nd, W. J. McCormack.
Hens, 6.—1st, J. T. Isbell; 2nd, W. H. Reid.

A. O. C. AFRICAN OWL.

Cocks, 3.—1st, F. A. Woodward; 2nd, W. H. Reid.
Hens, 3.—1st, F. A. Woodward; 2nd, W. H. Reid.
Bred in 1905.—1st, A. W. Barton; 2nd, W. H. Reid.

BLUE OR SILVER ENGLISH OWL.

Cocks, 5.—1st, F. Bell; 2nd, C. H. Currier.
Hens, 2.—1st, C. H. Currier; 2nd, F. Bell.

A. O. C. ENGLISH OWL.

Hens, 1.—1st, C. H. Currier.
Bred in 1905, 5.—1st and 2nd, F. Bell.

A. O. V. OWL.

Cocks, 3.—1st, F. Bell; 2nd, W. J. Teal.
Hens, 2.—1st, H. A. Hatton; 2nd, W. J. Teale.

BLACK TURBIT.

Cocks, 3.—1st, Robt. Henry; 2nd, W. H. Reid.
Hens, 4.—1st, Robt. Henry; 2nd, F. Bell.

A. O. C. TURBIT.

Cocks, 2.—1st, F. Bell; 2nd, Robt. Henry.
Hens, 2.—1st, Robt. Henry; 2nd, W. H. Reid.
Bred in 1905, 4.—1st and 2nd, Robt. Henry.

A. O. STANDARD VARIETY.

Cocks, 5.—1st, J. A. Hatton; 2nd, W. J. Teale.
Hens, 5.—1st, J. A. Hatton; 2nd, F. Finn.
Bred in 1905, 2.—1st and 2nd, A. Bunker.

RABBIT, LOP EARED, SOLID COLOR.

Buck, 2.—1st and 2nd, Wm. Fox.

DUTCH RABBIT.

Buck, 2.—1st and 2nd, Wm. Fox.
Doe, 2.—1st and 2nd, Wm. Fox.

A. O. V. RABBIT.

Buck, 3.—1st and 2nd, Wm. Fox; 3rd, Douglas Mitchell.
Doe, 3.—1st, Douglas Mitchell; 2nd and 3rd, Wm. Fox.

BELGIAN HARE.

Buck, 3.—1st and 2nd, Wm. Fox; 3rd, Douglas Mitchell.
Doe, 3.—1st and 2nd, Wm. Fox; 3rd, Douglas Mitchell.

SCOTCH FANCY CANARY.

Cocks, 2.—1st and 2nd, F. W. Hodgkin.

Cock, 2.—1st and 2nd, F. W. Hodgkin.

A. O. V. CANARY.

Cocks, 1.—1st, F. W. Hodgkin.

Hens, 1.—1st, F. W. Hodgkin.

GOLDFINCH.

Cocks, 1.—1st, F. W. Hodgkin.

PEN OF 4 UTILITY FOWLS.

Cocks, 15.—1st, Scanlon Bros.; 2nd and 4th, F. W. Krouse; 3rd, L. H. Baldwin.

AWARDS OF POULTRY SPECIALS.

Light Brahmas.—Best cock or cockerel, Geo. A. Tossey; best cock, hen, cockerel and pullet, Geo. A. Tossey; best female, Geo. A. Tossey; best collection, Geo. A. Tossey.

Best collection in any one variety of Asiatics.—H. Wyatt.

Best collection in any one variety of large fowl.—H. Wyatt.

Dark Brahmas.—Best cock, L. C. Sage; best cockerel, L. C. Sage; best pullet, L. C. Sage; best hen or pullet, L. C. Sage; best cock, hen, cockerel and pullet, L. C. Sage; best collection, L. C. Sage.

Buff Cochins.—Best cock or cockerel, H. Wyatt; best hen or pullet, H. Wyatt; best collection, H. Wyatt.

Partridge Cochins.—Best cock or cockerel, R. Oke; best hen or pullet, R. Oke; best collection, R. Oke.

Black Cochins.—Best cockerel, R. B. Millard.

Black Langshans.—Best collection, R. McCurdy; best cock, R. McCurdy; best cock, hen, cockerel and pullet, R. McCurdy.

A. O. C. Langshans.—Best collection, W. J. Teal.

White Langshans.—Best collection, W. J. Teal.

Barred Plymouth Rocks.—Best hen, N. Cosh; best male, N. Cosh; best cockerel and pullet; best three cocks, three hens, three cockerels and three pullets, N. Cosh; best collection, N. Cosh; best female, Jno. Pringle.

White Plymouth Rocks.—Best cock, Daly & Dill; best hen, Daly & Dill; best three hens, A. G. Brown; best shaped hen, Daly & Dill; best cockerel, Daly & Dill; best and largest exhibit, Daly & Dill; best collection, Daly & Dill; best cock, hen, cockerel and pullet, Daly & Dill.

Buff Plymouth Rocks.—Best two cocks and two cockerels, John Bawden; best collection, J. R. Boyce; best colored male, Jno. Bawden; best hen and pullet, J. R. Boyce; best collection in any one variety of American or English varieties, A. Bogue.

Golden Laced Wyandottes.—Best cock, J. H. Magill; best cockerel, J. H. Magill; best laced pullet, W. Lemon; best cock or cockerel, J. H. Magill; best colored hen and pullet, J. H. Magill; best hen or pullet, W. Lemon; best bird in class, J. H. Magill; best collection J. H. Magill.

Silver-Laced Wyandottes.—Best cock, W. Lemon; best hen, Jas. Arthur; best cockerel, Jas. Arthur; best pullet, W. Lemon; best collection, Jas. Arthur; best collection, Jas. Arthur.

Black Wyandottes.—Best cock, F. P. McDonell; best cock or cockerel, F. P. McDonell; best hen or pullet, G. & J. Bogue; best collection, F. P. McDonell.

Buff Wyandottes.—Best cock, showing least foreign color in plumage, S. T. Bartlett; best hen showing least foreign color in plumage, S. T. Bartlett; best four or more hens, S. T. Bartlett; best cock, hen, cockerel and pullet, S. T. Bartlett; best collection, S. T. Bartlett.

White Wyandottes.—Best cock, J. S. Martin; best hen, J. A. Carroll; best cockerel, J. S. Martin; three whitest cockerels, J. H. Martin; best cockerel, J. S. Martin; best cockerel bred by exhibitor, J. S. Martin; best pullet, J. S. Martin; best cock and hen, J. S. Martin; best shaped female, J. S. Martin; best collection, J. S. Martin; best cock, hen, cockerel and pullet, J. S. Martin; best exhibit owned by member of the Guelph Poultry Ass'n., Wm. Wilson; best shaped hen, J. A. Carroll.

- Partridge Wyandottes.*—Best hen, T. H. Scott; best two pairs aged Partridge Wyandottes, T. H. Scott; best collection, L. C. Sage; best pencilled female, L. C. Sage.
- Columbian Wyandottes.*—Best cockerel and pullet, T. H. Scott.
- Dominiques.*—Best collection, M. T. Burn & Son; best cockerel and pullet, M. T. Burn & Son.
- Black Javas.*—Best cock, C. J. Daniels; best hen, R. Oke; best cockerel, G. & J. Bogue; best pullet, G. & J. Bogue.
- Mottled Javas.*—Best cock, hen, cockerel and pullet, R. Oke; best collection, R. Oke.
- Black Red Games.*—Best hen, W. H. Butler; best cockerel, W. H. Butler; best cock and cockerel, W. H. Butler; best collection, W. H. Butler.
- Brown Red Game.*—Best cockerel and two pullets, Wm. Barber & Co.; best cock and three hens, W. J. Teale.
- Duckwing Games.*—Best cock, Wm. Barber & Co.; best collection, Wm. Barber & Co.; best cock, hen, cockerel and pullet, Wm. Barber & Co.
- Pyle Games.*—Best cockerel, T. Sherlock; best pullet, T. Sherlock; best collection, T. Sherlock.
- Indian Game, Cornish.*—Best colored cockerel, J. A. Carroll; best pullet, J. W. Nixon; best cock or cockerel, Chas. LaRose; best collection, J. W. Nixon Co.
- Black Sumatra Games.*—Best cock, G. & J. Bogue; best collection, C. J. Daniels.
- Birchen Games.*—Best two hens, Wm. Barber & Co.; best two cockerels, Wm. Barber & Co.
- R. C. White Leghorns.*—Best cock, W. C. Wilson & Son; best cockerel, W. J. Bell; best pullet, Steffler & Burns; two best headed cockerels, W. J. Bell; best cock, hen, cockerel and pullet, Steffler & Burns.
- S. C. White Leghorns.*—Best hen, F. Wales; best cockerel, J. R. Laidlaw; best headed cockerel, J. R. Laidlaw; best pullet, R. C. Coates; best cock and cockerel, R. C. Coates; best cock or cockerel, R. C. Coates; best shaped male, R. C. Coates; best colored male, R. C. Coates; best shaped female, R. C. Coates; best colored female, R. C. Coates; whitest cock, R. C. Coates; best shaped cock, R. C. Coates; best hen, F. Wales; largest hen, W. E. Hoggarth; best shaped hen, W. E. Hoggarth; best cockerel, J. R. Laidlaw; best two pullets, R. C. Coates; best cockerel and pullet, F. Wales; best cock, hen, cockerel and pullet, R. C. Coates.
- Black Leghorns.*—Best cock, A. & T. Readwin; best hen, A. E. Doan; best cockerel, A. E. Doan; best pullet, A. E. Doan; best shaped male, W. M. Osborne; best colored male, W. M. Osborne; best shaped female, W. M. Osborne; best colored female, W. M. Osborne; best cock, hen, cockerel and pullet, W. M. Osborne.
- R. C. Brown Leghorns.*—Best cock and hen, Wm. Cadman; best cockerel, T. J. Conley; best shaped male, Wm. Cadman; best colored male, Wm. Cadman; best male, T. J. Conley; best shaped female, Wm. Cadman; best colored female, Wm. Cadman; best female, Wm. Cadman; best hen, Wm. Cadman; best cockerel and pullet, Wm. Cadman; best two cockerels and two pullets, Wm. Cadman; best collection, Wm. Cadman.
- S. C. Brown Leghorns.*—Best cockerel, H. F. Becker; cockerel with best striped saddle, Jno. Bradley; best pullet, G. G. Henderson; best cock or cockerel, H. F. Becker; best collection, H. F. Becker.
- Buff Leghorns.*—Best cock, E. Jeffries; best hen, E. Jeffries; best two cockerels, N. K. Cornwall; best two pullets, N. K. Cornwall; best collection, N. K. Cornwall; best cockerel and pullet, N. K. Cornwall; best cockerel, N. K. Cornwall; best pullet, N. K. Cornwall.
- Spanish.*—Best collection, J. H. Warrington.
- S. C. Black Minorcas.*—Best cock, J. H. Minshall; best hen, J. H. Minshall; best cockerel, J. H. Minshall; best pullet, J. H. Minshall; best collection, J. H. Minshall; best collection shown by exhibitor who has never won a first prize, Robert Coates.
- R. C. Black Minorcas.*—Best two cockerels, H. Minshall; best cock and hen, W. Worth; best cockerel and pullet, J. H. Minshall; best collection, W. Worth.
- Black Minorcas.*—Best cockerel, J. H. Minshall.
- Andalusians.*—Best cock or cockerel, Newton Cosh; best hen or pullet, N. Cosh; best collection, N. Cosh; best blue Andalusian male, N. Cosh; best blue Andalusian female, N. Cosh.
- Silver Grey Dorkings.*—Best two cocks, R. Goldie; best cock or cockerel, R. Goldie; best hen or pullet, J. McCormack; best cock, hen, cockerel and pullet, R. Goldie; best collection, R. Goldie.
- Colored Dorkings.*—Best collection, J. McCormack.
- White Dorkings.*—Best collection, A. Bogue.
- Dorkings.*—All varieties, best collection, A. Bogue.

- Buff Orpingtons*.—Best cock bred by exhibitor, J. W. Clark; best cockerel, J. S. Niven; best pullet, H. A. Hoffman; best two cockerels and two pullets, P. E. Aird; best cock, hen, cockerel and pullet, P. E. Aird; best collection, P. E. Aird; "Colonial Cup" for best cockerel, S. J. Niven; silver cup for best cock, hen, cockerel and pullet, P. E. Aird; best hen, P. E. Aird.
- S. C. Buff Orpingtons*.—Best hen and pullet, P. E. Aird; 3rd prize cock, P. E. Aird.
- Black Orpingtons*.—Best hen, H. A. Hoffman; best pullet, H. A. Hoffman; best male, C. J. Daniels; best cock and hen, C. J. Daniels; best two cockerels and two pullets, H. A. Hoffman.
- Houdans*.—Best cock or cockerel, G. & J. Bogue; best hen or pullet, D. C. Trew; best collection, D. C. Trew.
- Creve Coeurs*.—Best cockerel and pullet, R. Oke; best collection, R. Oke.
- La Fleche*.—Best cock and hen, J. H. Warrington; best cockerel and pullet, R. Oke.
- W. C. B. Polands*.—Best cockerel and pullet, Wm. McNeil; best cock, hen, cockerel and pullet, Wm. McNeil.
- Golden Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil and A. Bogue, tie.
- Silver Polands*.—Best collection, M. T. Burn.
- White Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- Golden-Bearded Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- Silver-Bearded Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- White-Bearded Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- Buff-Laced Polands*.—Best cock, hen, cockerel and pullet, Wm. McNeil and G. & J. Bogue, tie.
- Polands*.—Best collection, Wm. McNeil.
- G. S. Hamburgs*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- S. S. Hamburgs*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- G. P. Hamburgs*.—Best cock, hen, cockerel and pullet, Wm. McNeil; best shaped bird, Wm. McNeil; best color, R. Oke.
- Silver Spangled Hamburgs*.—Best color, Wm. McNeil; best shape, R. Oke.
- Silver Pencilled Hamburgs*.—Best color, Wm. McNeil; best shape, R. Oke; best cock, hen, cockerel and pullet, Wm. McNeil.
- Black Hamburgs*.—Best cockerel, R. Oke; best pullet, Wm. McNeil; best cock, hen, cockerel and pullet, Wm. McNeil; best shaped male or female, Wm. McNeil; best color male or female, R. Oke.
- Hamburgs or Polands*.—Best collection, Wm. McNeil.
- Red Caps*.—Best cock, G. & J. Bogue; best pullet, E. Wells; best collection, E. Wells.
- Sultans*.—Best cock, hen, cockerel and pullet, G. & J. Bogue; best collection, G. & J. Bogue.
- Silbies*.—Best two cocks, Wm. McNeil; best collection, Wm. McNeil.
- Rhode Island Reds*.—Best two cockerels, W. A. McMaster; best two pullets, W. A. McMaster; best collection, Wm. McNeil.
- Game Bantams*.—Best cockerel or pullet, any color, C. R. Crowe.
- Black Red Game Bantams*.—Best cock, V. Barber; best hen, Wm. Hammall; best cockerel, C. R. Crowe; best pullet, Wm. Barber; best collection in any one variety, H. B. Donovan.
- Brown Red Game Bantams*.—Best cock, Wm. Hammall; best hen, J. Philpot & Son; best cockerel, Wm. Hammall; best pullet, Rook Bros.; best cockerel and pullet, Wm. Hammall.
- Duckwing Game Bantams*.—Best cock, Wm. Hammall; best hen, C. R. Crowe; best cockerel, Wm. Hammall; best two pullets, C. R. Crowe.
- Golden Duckwing Game Bantams*.—Best cock, Wm. Hammall.
- White Game Bantams*.—Best collection, H. B. Donovan.
- A. O. V. Game Bantams*.—Best collection, Rook Bros.
- Birchen Game Bantams*.—Best pullet, Rook Bros.
- G. Sebright Bantams*.—Best cockerel, R. Oke; best pullet, R. Oke; best cock, hen, cockerel and pullet, R. Oke.
- S. Sebright Bantams*.—Best two cockerels and two pullets, Spiers Bros.; best two pullets, Spiers Bros.; best collection, Spiers Bros.
- Black Rose Comb Bantams*.—Best two cockerels, W. H. Fairley; best pullet, Slessor & McCracken; best cock, hen, cockerel and pullet, R. Oke.
- White Rose Comb Bantams*.—Best collection, H. B. Donovan.
- White Cochin Bantams*.—Best collection, Wm. McNeil.
- Buff Cochin Bantams*.—Best two cockerels and two pullets, Wm. McNeil; best cock, hen, cockerel and pullet, Wm. McNeil.
- Black Cochin Bantams*.—Best cock, Doidge & McNeil; best cockerel and pullet, Doidge & McNeil; best collection, Doidge & McNeil.
- Partridge Cochin Bantams*.—Best cock, A. W. Bell; best hen, R. & I. Graham; best cockerel, A. W. Bell; best pullet, A. W. Bell; best collection, A. W. Bell.

- W. Booted Bantams*.—Best cock, hen, cockerel and pullet, R. Oke; best three cockerels and three pullets, W. J. Teale.
- Black Tailed Japanese Bantams*.—Best cock, hen, cockerel and pullet, R. Oke.
- Black Japanese Bantams*.—Best cock, hen, cockerel and pullet, R. Oke.
- White Japanese Bantams*.—Best cockerel and pullet, Wm. McNeil; best cock, hen, cockerel and pullet, Wm. McNeil.
- Polish Bearded Bantams*.—Best cock, hen, cockerel and pullet, Wm. McNeil.
- Polish Unbearded Bantams*.—Best cock, hen, cockerel and pullets, R. Oke; best collection, R. Oke.
- A. O. V. Bantams*.—Best collection, H. B. Donovan.
- Light Brahma Bantams*.—Best pullet, W. E. Raymo.
- Best collection in any one variety of Bantams, other than Game Bantams, Doidge & McNeil.
- Bronze Turkeys*.—Best male, W. J. Bell; best female, W. J. Bell.
- White Turkeys*.—Best female, old, Baker Bros.; best collection, Baker Bros.
- A. O. V. Turkeys*.—Best collection, W. H. Beattie.
- Toulouse Geese*.—Best female, Geo. Colwell; best male or female, young, Geo. Colwell; best in class, Geo. Colwell.
- Emden Geese*.—Best male or female, old, Scanlon Bros.; best male or female, young, C. M. Blyth; best collection, Colwell Bros.
- Chinese Geese*.—Best collection, M. T. Burn & Son.
- African Geese*.—Best young male, Geo. Colwell; best young female, M. T. Burn & Son.
- Geese, any Variety*.—Best collection, Geo. Colwell.
- Aylesbury Ducks*.—Best male, A. Bogue; best collection, Geo. Colwell.
- Rouen Ducks*.—Best collection, A. Bogue.
- Pekin Ducks*.—Best male, old, A. Bogue; best female, old, A. Bogue; best male, young, Scanlon Bros.; best female, young, Scanlon Bros.
- Indian Runner Ducks*.—Best male, old, Geo. Colwell; best female, old, T. H. Scott; best male, young, T. H. Scott; best female, young, F. W. Krouse; best three males, young, T. H. Scott; best collection, T. H. Scott.
- Cayuga Ducks*.—Best male, old, I. T. Knight; best female, old, I. T. Knight; best male, young, G. & J. Bogue; best female young, G. & J. Bogue; best collection, I. T. Knight.
- Muscovy Ducks*.—Best male, old, Baker Bros.; best female, old, I. T. Knight; best male, young, M. T. Burn & Son; best female, young, W. J. Teal.
- Fancy Ducks*.—Best collection, R. Goldie.
- A. O. V. Ducks*.—Best collection, R. Goldie.
- Bronze Turkeys*.—Best collection, W. J. Bell.
- White Turkeys*.—Best collection, Baker Bros.
- Toulouse Geese*.—Best collection, Geo. Colwell.
- Bremen Geese*.—Best collection, C. Blythe.
- A. O. V. Geese*.—Best collection, Geo. Colwell.
- White Ducks*.—Best collection, C. A. R. Tilt.
- Colored Ducks*.—Best collection, I. T. Knight.
- Pheasants*.—Best collection, R. Goldie.

PIGEONS.

- Best Carrier bred in 1905*.—G. J. White.
- Best White Pouter Hen*.—L. Ridler.
- Best Pouter*.—C. H. Currier.
- Best Collection Pigmies*.—J. T. Isbeli.
- McCormack Cup for best collection*.—Geo. J. Asman.
- Best Silver Muff hen*.—Steffler & Burns.
- Best L. F. Bald Tumbler*.—C. H. Currier.
- Best collection Tumblers*.—Geo. J. Asman.
- Best collection S. F. Tumblers*.—Jos. A. Worthy.
- Best A. O. V. Barb hen*.—A. & T. Readwin.
- Best Red Jacobin cock*.—C. H. Currier.
- Best Jacobin, 1905*.—C. H. Currier.
- Best three Jacobins, at least two colors to qualify*.—A. W. Barton.
- Best S. F. Silver Dun cock*.—W. H. Reid.
- Best White Fantail cock*.—Chas. Massie.
- Best White Fantail hen*.—W. H. Reid.
- Best Black Fantail cock*.—W. J. McCormack.
- Best Blue Fantail cock*.—A. & T. Readwin.
- Best Blue Fantail hen*.—W. H. Reid.

Best Swallow, bred 1905.—A. W. Barton.
Best Blue Wing Swallow, bred 1905.—L. Ridler.
Best Dragoon, bred 1905.—Geo. J. White.
Best Archangel.—C. H. Currier.
Best collection Archangel, four at least.—C. H. Currier.
Best African Owl.—W. H. Reid.
Best English Owl, bred 1905.—F. Bell.
Best Chinese Owl, Blue, cock.—F. Bell.
Best Chinese Owl, Blue, hen.—J. A. Hatton.
Best Black Owl, cock.—W. J. Teal.
Best Black Owl, hen.—W. J. Teal.
Best Silver Owl.—F. Bell.
Best Moorhead, cock.—W. J. Teal.
Best Moorhead, hen.—W. J. Teal.
Best A. O. V. cock.—J. A. Hatton.
Best A. O. V. hen.—J. A. Hatton.
Best collection of Pigeons.—W. H. Reid.

Rabbits.—Best collection Lop Eared, W. Fox; best collection Dutch Rabbits, Wm. Fox.
Hares.—Best collection Belgian Hares, Wm. Fox.
Canaries.—Best collection Scotch Fancy, F. W. Hodgkin; best collection A. O. V. Canary, F. W. Hodgkin.

The Eastern Ontario Live Stock and Poultry Show, Ottawa, 1906.

CATTLE.

SHORTHORNS.

Steer, 2 years and under 3.—1st, R. Reid & Co., Hintonburg; 2nd, Shortreed, Black, Armstrong Co.
Steer, 1 year and under 2.—1st, Jas. Rennie & Son, Blackwater; 2nd, R. Reid & Co., Hintonburg; 3rd, 4th and 5th, Shortreed, Black, Armstrong Co., Fergus.
Steer, under 1 year.—1st, Jas. Rennie & Sons, Blackwater; 2nd and 3rd, Shortreed, Black, Armstrong Co., Fergus; 4th, R. Reid & Co., Hintonburg.
Cow or Heifer, 3 years and over.—1st, N. S. Robertson, Arnprior; 2nd, Edward Baker, Winchester.
Heifer, 2 years and under 3.—1st, N. S. Robertson, Arnprior.
Heifer, under 2 years.—1st, Shortreed, Black, Armstrong Co., Fergus; 2nd and 3rd, N. S. Robertson, Arnprior.

HEREFORDS AND ABERDEEN-ANGUS.

Steer or Heifer, 2 years and under 3.—1st, Shortreed, Black, Armstrong Co., Fergus.
Steer or Heifer, 1 year and under 2.—1st and 2nd, Shortreed, Black, Armstrong Co.
Steer or Heifer, under 1 year.—1st, Shortreed, Black, Armstrong Co., Fergus.
Cow or Heifer, 3 years and over.—1st, Shortreed, Black, Armstrong Co., Fergus.

GRADES OR CROSSES.

Steer, 2 years and under 3.—1st and 3rd, Jas. Leask, Greenbank; 2nd, Shortreed, Black, Armstrong Co.; 4th, R. C. Sparrow & Sons, Antrim; 5th, R. Reid & Co.
Steer, 1 year and under 2.—1st, 3rd and 5th, Shortreed, Black, Armstrong Co.; 2nd and 4th, Jas. Leask, Greenbank.
Steer, under 1 year.—1st and 3rd, Jas. Leask, Greenbank; 2nd, Shortreed, Black, Armstrong & Co., Fergus; 4th, A. H. Foster, Twin Elm.
Cow or Heifer, 3 years or over.—1st and 4th, Jas. Rennie & Sons, Blackwater; 2nd and 5th, Shortreed, Black, Armstrong Co., Fergus; 3rd, Jas. Leask, Greenbank.
Heifer, 2 years and under 3.—1st and 2nd, Jas. Leask, Greenbank; 3rd and 4th, Shortreed, Black, Armstrong Co., Fergus.
Heifer, under 2 years.—1st, Jas. Leask, Greenbank; 2nd, Jas. Rennie & Sons, Blackwater; 3rd, R. Reid & Co., Hintonburg; 4th and 5th, Shortreed, Black, Armstrong Co., Fergus.

DRESSED CARCASSES.

Pure-breds.—1st, 2nd and 3rd, Shortreed, Black, Armstrong Co., Fergus.
Grades.—1st, 2nd and 3rd, Shortreed, Black, Armstrong Co., Fergus.

EXPORT STEERS.

Three Export Steers.—1st, Jas. Leask, Greenbank; 2nd, J. Rennie & Sons, Blackwater;
 3rd, 4th and 5th, Shortreed, Black, Armstrong Co.; 6th, R. Reid & Co.

SHEEP.

COTSWOLDS.

Wether, under 1 year.—1st, 2nd and 3rd, S. J. Lyons, Norval; 4th, W. E. Wright, Glanworth; 5th, A. G. H. Luxton, Milton West.
Three Wethers, under 1 year.—1st, S. J. Lyons, Norval.
Ewe, under 1 year.—1st, 2nd and 3rd, S. J. Lyons, Norval.
Dressed Carcass Wether, under 1 year.—1st, S. J. Lyons, Norval; 2nd, W. E. Wright, Glanworth; 3rd, A. G. H. Luxton, Milton West.

LINCOLNS.

Wether, under 1 year.—1st, 3rd and 5th, L. Parkinson, Eramosa; 2nd, 4th and 6th, Shortreed, Black, Armstrong Co., Fergus.
Three Wethers, under 1 year.—1st, L. Parkinson, Eramosa; 2nd, Shortreed, Black, Armstrong Co., Fergus.
Ewe, under 1 year.—1st, 2nd and 3rd, L. Parkinson, Eramosa; 4th, Shortreed, Black, Armstrong Co., Fergus.
Dressed Carcass Wether, under 1 year.—1st, L. Parkinson, Eramosa; 2nd and 3rd, Shortreed, Black, Armstrong Co., Fergus.

LEICESTERS.

Wether, 1 year and under 2.—1st and 2nd, A. W. Smith, Maple Lodge.
Wether, under 1 year.—1st, 2nd and 3rd, A. W. Smith; 4th, A. G. H. Luxton, Milton, West.
Three Wethers, under 1 year.—1st, A. W. Smith, Maple Lodge.
Ewe, under 1 year.—1st, 2nd and 3rd, A. W. Smith, Maple Lodge.
Dressed Carcass Wether, under 1 year.—1st, A. W. Smith; 2nd, A. G. H. Luxton

OXFORDS.

Wether, under 1 year.—1st, W. E. Wright, Glanworth; 2nd, J. A. Richardson.
Ewe, under 1 year.—1st and 2nd, W. E. Wright, Glanworth; 3rd, J. A. Richardson, South March; 4th, J. A. Richardson; 5th, Shortreed, Black, Armstrong Co.

SOUTHDOWNS.

Wether, 1 year and under 2.—1st, Telfer Bros., Paris.
Wether, under 1 year.—1st, 2nd and 3rd, John Jackson, Abingdon.
Three Wethers, under 1 year.—1st, J. Jackson & Son, Abingdon.
Ewe, under 1 year.—1st and 3rd, Telfer Bros., Paris; 2nd and 4th, J. Jackson & Son.
Dressed Carcass Wether, under 1 year.—J. Jackson & Son, Abingdon.

DORSET HORNS.

Wether, under 1 year.—1st and 3rd, R. H. Harding, Thorndale; 2nd, A. G. H. Luxton.
Ewe, under 1 year.—1st, R. H. Harding, Thorndale; 2nd, A. G. H. Luxton, Milton West; 3rd, R. H. Harding, Thorndale; 4th and 5th, J. A. Richardson.
Dressed Carcass Wether, under 1 year.—1st, A. G. H. Luxton, Milton West.

HAMPSHIRE AND SUFFOLKS.

Wether, 1 year and under 2.—1st and 2nd, Jas. Bowman, Guelph.
Wether, under 1 year.—1st and 2nd, Telfer Bros., Paris; 3rd, 4th and 5th, Jas. Bowman, Guelph.
Ewe, under 1 year.—1st, 2nd and 3rd, Telfer Bros., Paris; 4th and 5th, Jas. Bowman.
Dressed Carcass Wether, under 1 year.—1st, Jas. Bowman, Guelph.

GRADES OR CROSSES.

Wether, 1 year and under 2.—1st and 2nd, A. W. Smith, Maple Lodge.
Three Wethers, under 1 year.—1st, A. W. Smith, Maple Lodge; 2nd, L. Parkinson, Eramosa; 3rd, A. G. H. Luxton, Milton West.
Wether, under 1 year.—1st and 2nd, A. W. Smith, Maple Lodge; 3rd, L. Parkinson, Eramosa; 4th and 5th, A. G. H. Luxton, Milton West.
Dressed Carcass Wether, under 1 year.—1st, A. W. Smith, Maple Lodge; 2nd and 3rd, A. G. H. Luxton, Milton West.

SWINE.

BERKSHIRES.

Barrow, 6 months and under 9.—1st and 2nd, S. J. Lyons, Norval.
Barrow, under 6 months.—1st and 2nd, S. J. Lyons, Norval; 3rd, R. Reid & Co.
Sow, 6 months and under 9.—1st and 2nd, S. J. Lyons, Norval.
Sow, under 6 months.—1st and 2nd, S. J. Lyons, Norval; 3rd, R. Reid & Co.

YORKSHIRES.

Barrow, 6 months and under 9.—1st and 3rd, J. Featherston & Son, Streetsville; 2nd and 4th, J. E. Brethour, Burford.
Barrow, under 6 months.—1st and 3rd, J. E. Brethour, Burford; 2nd and 4th, J. Featherston & Son, Streetsville.
Sow, 6 months and under 9.—1st and 2nd, J. E. Brethour, Burford; 3rd and 4th, J. Featherston & Son, Streetsville.
Sow, under 6 months.—1st, 2nd and 4th, J. E. Brethour, Burford; 3rd and 5th, J. Featherston & Son, Streetsville.

TAMWORTHES.

Barrow, 6 months and under 9.—1st and 3rd, R. Reid & Co., Hintonburg; 2nd, W. H. & A. H. McNish, Lyn.
Barrow, under 6 months.—1st and 2nd, R. Reid & Co., Hintonburg; 3rd, W. H. & A. H. McNish, Lyn.
Sow, 6 months and under 9.—1st, W. H. & A. H. McNish, Lyn; 2nd, 3rd and 4th, R. Reid & Co., Hintonburg.
Sow, under 6 months.—1st, 2nd and 4th, R. Reid & Co., Hintonburg; 3rd, W. H. & A. H. McNish, Lyn.

GRADES OR CROSSES.

Barrow, 6 months and under 9.—1st and 2nd, J. Featherston & Son, Streetsville; 3rd and 4th, J. E. Brethour, Burford.
Barrow, under 6 months.—1st and 3rd, J. E. Brethour, Burford; 2nd and 5th, W. H. & A. H. McNish, Lyn; 4th, J. Featherston & Son, Streetsville.
Sow, 6 months and under 9.—1st and 2nd, J. Featherston & Son, Streetsville; 3rd and 4th, J. E. Brethour, Burford.
Sow, under 6 months.—1st, J. Featherston & Son, Streetsville; 2nd and 3rd, J. E. Brethour, Burford; 4th, W. H. & A. H. McNish; 5th, Robert Clark, Ottawa.

EXPORT BACON HOGS.

Three Pure-Breds.—1st, 3rd, 5th and 7th, J. E. Brethour, Burford; 2nd and 4th, J. Featherston, Streetsville; 6th, R. Reid & Co., Hintonburg.
Three Grades or Crosses.—1st and 5th, J. Featherston & Son, Streetsville; 2nd and 3rd, J. E. Brethour, Burford; 4th, W. H. & A. H. McNish.
Three Best Export Bacon Hogs.—1st, J. E. Brethour, Burford.

DRESSED CARCASSES.

Three Pure-Breds.—1st and 5th, J. Featherston & Son, Streetsville; 2nd, 3rd and 7th, J. E. Brethour, Burford; 4th, R. Reid & Co.; 6th, J. A. Richardson.
Three Grades or Crosses.—1st and 3rd, J. Featherston & Son, Streetsville; 2nd and 4th, J. E. Brethour, Burford; 5th, Robert Clark, Ottawa.
Three Best Bacon Hogs.—J. Featherston & Son, Streetsville.

DAIRY TEST.

Name of Cow and Owner.	Lbs. Milk.	% Fat.	Lbs. Fat.	Lbs. Solids, not Fat.	Pts. for Day's Milk.	Pts. for Fat.	Pts. for Solids, not Fat.	Total Points
Class 25, Section 1.—Shorthorn cow, 42 months and over—								
1st, Majorie, R. Reid & Co., Hintonburg	79.02	3.4	2.68	7.19	.....	53.6	28.7	82.3
Class 25, Section 2.—Shorthorn heifer, under 42 months—								
1st, May Choice, A. H. Foster, Twin Elm	59.03	4.	2.36	5.48	.....	47.2	21.9	69.1
2nd, Tiddlewink, E. Baker, Winchester	55.12	3.6	1.98	4.85	1.7	39.6	19.4	60.7
Class 26, Section 1.—Ayrshire cow, 42 months and over—								
1st, Maud of Hill View, J. G. Clark, Ottawa	90.04	4.	3.60	8.19	6.5	72.	32.7	111.2
2nd, Polly of Woodroffe, J. G. Clark, Ottawa	92.	3.5	3.22	8.28	5.5	64.4	33.1	103.
3rd, Pearl of Maple Cliff, R. Reid & Co., Hintonburg	72.09	3.3	2.37	6.56	.....	47.4	26.2	73.6
Class 26, Section 2.—Ayrshire heifer, under 42 months—								
1st, Dairy Maid II., J. G. Clark, Ottawa	67.09	4.2	2.81	6.17	4.2	56.2	24.6	85.
Class 27, Section 1.—Holstein cow, 42 months and over—								
1st, Lady Colantha, N. Sangster, Ormstown, Que.	141.	3.2	4.51	11.98	.....	90.2	47.9	138.1
2nd, Audrey, N. Sangster, Ormstown, Que.	122.04	3.2	3.90	10.	1	78.	40.	118.1
3rd, Maudie De Kol, H. Sangster, Ormstown, Que.	91.10	3.	2.73	7.28	.....	54.6	29.1	83.7
Class 27, Section 2.—Holstein heifer, under 42 months—								
1st, Rhoda's Queen, N. Sangster, Ormstown, Que.	109.06	3.	3.27	8.83	.....	65.4	33.3	98.7
2nd, Madeline, N. Sangster, Ormstown, Que.	102.04	3.	3.06	8.57	.....	61.2	34.2	95.4
3rd, Justine, R. Reid & Co., Hintonburg	62.15	3.6	2.23	5.15	4.5	44.6	20.6	69.7
4th, Lady Agatha, R. Reid & Co., Hintonburg	66.03	3.3	2.17	5.48	3.2	43.4	21.9	68.5
Class 28, Section 1.—Jersey cow, 42 months and over—								
1st, Bashful Daisy, S. J. Lyons, Norval	50.07	4.8	2.40	4.35	6.	48.	17.4	71.4
2nd, Hilda of Shady Nook, S. J. Lyons, Norval	52.01	4.6	2.39	4.42	5.7	47.8	17.6	71.1
Class 28, Section 2.—Jersey heifer, under 42 months—								
1st, Mary Ann of Norval, S. J. Lyons, Norval	42.04	5.4	2.27	3.78	.....	45.4	15.1	60.5
Class 29, Section 1.—Grade cow, 42 months and over—								
1st, Rice, N. Sangster, Ormstown, Que.	116.13	3.8	4.41	9.63	.....	88.2	38.5	126.7
2nd, Carrie, T. A. Spratt, Billing's Bridge	106.10	4.1	4.35	9.12	1.3	87.	36.4	124.7
3rd, Nigger, R. Reid & Co., Hintonburg	113.01	3.4	3.84	9.49	.....	76.8	37.9	114.7
4th, Roux, R. Reid & Co., Hintonburg	97.10	3.6	3.49	8.15	7.3	69.8	32.6	109.7
5th, Golden, S. J. Lyons, Norval	59.02	4.6	2.71	5.01	.....	54.2	20.	74.2
Class 29, Section 2.—Grade heifer, under 42 months—								
1st, Minnie, R. Reid & Co., Hintonburg	61.14	3.5	2.13	5.19	1.	42.6	20.7	64.3

SEED DEPARTMENT.

FALL WHEAT.

1st. Jas. Snetsinger, Eamer's Corners.

SPRING WHEAT.

1st. Samuel J. Woods, Metcalfe.
2nd. D. Cumming, Russell.

3rd. Geo. R. Bradley, Carsonby.

BANNER OATS.

1st. Jas. Anderson, Fergus.
2nd. Samuel J. Woods, Metcalfe.

4th. D. Cumming, Russell.
3rd. Neil Sangster, Ormstown, Que.

OATS, ANY OTHER VARIETY OF WHITE.

1st. D. McGregor, Fergus.
2nd. Samuel J. Woods, Metcalfe.

3rd. Jas. Snetsinger, Eamer's Corners.
4th. Geo. R. Bradley, Carsonby.

BARLEY, SIX-ROWED.

1st. D. Cumming, Russell.
2nd. Geo. R. Bradley, Carsonby.

3rd. George Boyce, Merivale.
4th. Samuel J. Woods.

SMALL FIELD PEAS.

1st. Thomas Smith, Belwood.
2nd. D. Cumming, Russell.

3rd. Neil Sangster, Ormstown, Que.

POTATOES, ROSE-TYPE.

1st. Jas. Snetsinger, Eamer's Corners.

POTATOES, BEST EARLY VARIETY OTHER THAN ROSE-TYPE.

1st. Jas. Snetsinger; 2nd. Geo. Boyce; 3rd. Dougall Cumming.

POTATOES, WHITE.

1st. Jas. Snetsinger, Eamers' Corners.
2nd. A. H. Foster, Twin Elm.

3rd. Dougall Cumming, Russell.
4th. Smith Bros., Beachville.

INDIAN CORN, BEST FOR ENSILAGE IN OTTAWA VALLEY.

1st. D. Cumming, Russell.

2nd. Dougal Cumming, Russell.

TIMOTHY SEED.

1st. Dougall Cumming, Russell.
2nd. Jas. Snetsinger, Eamers' Corners.

3rd. Neil Sangster, Ormstown, Que.
4th. D. Cumming, Russell.

POULTRY.

LIGHT BRAHMAS.

Cocks, 7.—1st, A. Boyce; 2nd, J. A. Belford; 3rd, F. Wales; 4th, Geo. Emmett.
Hens, 18.—1st, J. A. Belford; 2nd, Dr. Pritchard; 3rd, F. Wales; 4th, A. Boyce.
Cockerels, 8.—1st, A. Boyce; 2nd, W. B. Nantel; 3rd, F. Wales; 4th, Chas. LaRose.
Pullets, 7.—1st and 3rd, W. B. Nantel; 2nd, Chas. LaRose; 4th, Dr. Pritchard.

DARK BRAHMAS.

Cocks, 3.—1st and 2nd, L. C. Sage; 3rd, F. Wales.
Hens, 5.—1st, W. B. Nantel; 2nd and 3rd, L. C. Sage; 4th, F. Wales.
Cockerels, 4.—1st, L. C. Sage; 2nd and 3rd, W. B. Nantel; 4th, F. Wales.
Pullets, 4.—1st, L. C. Sage; 2nd and 3rd, W. B. Nantel; 4th, C. LaRose.

BUFF COCHINS.

Cocks, 2.—1st, Geo. Emmett; 2nd, F. Wales.
Hens, 4.—1st, W. B. Nantel; 2nd, Geo. Emmett; 3rd, A. & T. Readwin; 4th, F. Wales.
Cockerels, 5.—1st and 2nd, W. B. Nantel; 3rd, F. L. Tooker; 4th, Dr. Pritchard.
Pullets, 5.—1st and 2nd, W. B. Nantel; 3rd, Dr. Pritchard; 4th, F. L. Tooker.

PARTRIDGE COCHINS.

Cocks, 2.—1st, F. Wales; 2nd, R. Oke.
Hens, 3.—1st, W. B. Nantel; 2nd, R. Oke; 3rd, F. Wales.
Cockerels, 3.—1st, R. Oke; 2nd, F. L. Tooker; 3rd, F. Wales.
Pullets, 3.—1st, R. Oke; 2nd, F. Wales; 3rd, F. L. Tooker.

BLACK COCHINS.

Cocks, 3.—1st, R. Oke; 2nd, Chas. LaRose; 3rd, W. B. Nantel.
Hens, 5.—1st, R. Oke; 2nd, W. B. Nantel; 3rd, A. & T. Readwin; 4th, Chas. LaRose.
Cockerels, 3.—1st and 3rd, Chas. LaRose; 2nd, R. Oke.
Pullets, 3.—1st, R. Oke; 2nd, Chas. LaRose; 3rd, W. B. Nantel.

WHITE COCHINS.

Cocks, 2.—1st, R. Oke; 2nd, W. B. Nantel.
Hens, 2.—1st, R. Oke; 2nd, W. B. Nantel.
Cockerels, 5.—1st, R. Oke; 2nd, W. B. Nantel; 3rd, C. LaRose; 4th, J. H. Williams
Pullets, 4.—1st, R. Oke; 2nd, W. B. Nantel; 3rd, C. LaRose; 4th, J. H. Williams.

BLACK LANGSHANS.

Cocks, 5.—1st and 3rd, Robt. McCurdy; 2nd, Garland & Gilchrist; 4th, Jas. J. Logan.
Hens, 7.—1st and 3rd, Robt. McCurdy; 2nd, Garland & Gilchrist; 4th, J. J. Logan.
Cockerels, 6.—1st and 2nd, Robt. McCurdy; 3rd, Jas. J. Logan; 4th, F. Wales.
Pullets, 10.—1st and 3rd, Robt. McCurdy; 2nd, F. Wales; 4th, Jas. J. Logan.

BARRED PLYMOUTH ROCKS.

Cocks, 6.—1st and 3rd, F. W. Beckstead; 2nd, J. E. Fidler; 4th, M. C. Neate.
Hens, 10.—1st and 2nd, F. W. Beckstead; 3rd, M. C. Neate; 4th, S. Short.
Cockerels, 21.—1st and 5th, F. A. James; 2nd, F. W. Beckstead; 3rd, R. E. Gibson;
 4th, A. A. Armstrong.
Pullets, 21.—1st and 3rd, F. W. Beckstead; 2nd, F. A. James; 4th, J. E. Fidler;
 4th, Garland & Gilchrist.

WHITE PLYMOUTH ROCKS.

Cocks, 3.—1st, Walter Bromley; 2nd and 3rd, Geo. Emmett.
Hens, 6.—1st, 3rd and 4th, Geo. Robertson; 2nd, Geo. Emmett.
Cockerels, 5.—1st, Geo. E. Craig; 2nd, 3rd and 4th, Geo. Robertson.
Pullets, 5.—1st and 2nd, Geo. Robertson; 3rd and 4th, Geo. E. Craig.

BUFF PLYMOUTH ROCKS.

Cocks, 2.—1st, D. Cumming; 2nd, Garland & Gilchrist.
Hens, 5.—1st, Geo. Emmett; 2nd, Garland & Gilchrist; 3rd, Ottawa Poultry Yards;
 4th, D. Cumming.
Cockerels, 5.—1st, Robert Robertson; 2nd, Ottawa Poultry Yards; 3rd, D. Cumming;
 4th, Jno. Vance.
Pullets, 8.—1st, Jno. Vance; 2nd, Ottawa Poultry Yards; 3rd, D. Cumming; 4th, Geo. Emmett.

GOLDEN LACED WYANDOTTES.

Cocks, 1.—1st, F. Wales.
Hens, 2.—1st, F. Wales; 2nd, F. L. Tooker.
Cockerels, 1.—1st, F. L. Tooker.
Pullets, 2.—1st, F. L. Tooker; 2nd, F. Wales.

SILVER LACED WYANDOTTES.

Cocks, 3.—1st, Wm. Delary; 2nd, Garland & Gilchrist; 3rd, Alex. Dynes.

Hens, 2.—1st, Garland & Gilchrist.

Cockerels, 6.—1st, Garland & Gilchrist; 2nd and 3rd, Wm. Delary; 4th, W. L. Montgomery.

Pullets, 9.—1st, Garland & Gilchrist; 2nd, 3rd and 4th, Wm. Delary.

BUFF WYANDOTTES.

Hens, 2.—1st and 2nd, Wm. McNeil.

Cockerels, 2.—1st, R. E. Blakeley; 2nd, S. Higman.

Pullets, 2.—1st, S. Higman; 2nd, R. E. Blakeley.

WHITE WYANDOTTES.

Cocks, 5.—1st, Rev. S. S. Anderson; 2nd, G. Lake; 3rd, Wm. Wallace; 4th, B. J. Hunt.

Hens, 7.—1st and 2nd, Geo. Higman; 3rd, B. J. Hunt; 4th, J. Snetsinger.

Cockerels, 12.—1st, G. Lake; 2nd and 4th, Geo. Higman; 3rd, R. Fallis; 5th, Gurney & McCue.

Pullets, 15.—1st, Geo. Higman; 2nd and 3rd, R. Fallis; 4th, Rev. S. S. Anderson; 5th, B. J. Hunt.

A. O. V. WYANDOTTES.

Cocks, 3.—1st, G. M. Matheson; 2nd, F. L. Tooker; 3rd, L. C. Sage.

Hens, 7.—1st, F. L. Tooker; 2nd, L. C. Sage; 3rd, W. H. Reid; 4th, G. & J. Bogue.

Cockerels, 7.—1st, G. & J. Bogue; 2nd, L. C. Sage; 3rd, G. M. Matheson; 4th, W. C. Pranschke.

Pullets, 11.—1st, L. C. Sage; 2nd, G. & J. Bogue; 3rd, G. M. Matheson.

BLACK JAVAS.

Cocks, 1.—1st, W. H. Reid.

Hens, 3.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, W. H. Reid.

Cockerels, 3.—1st and 2nd, G. & J. Bogue; 3rd, W. H. Reid.

Pullets, 4.—1st and 2nd, G. & J. Bogue; 3rd, R. Oke.

A. O. C. JAVAS.

Cocks, 2.—1st, R. Oke; 2nd, W. H. Reid.

Hens, 4.—1st, G. & J. Bogue; 2nd, R. Oke; 3rd, W. H. Reid.

Cockerels, 2.—1st, R. Oke; 2nd, G. & J. Bogue.

Pullets, 3.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, W. H. Reid.

RHODE ISLAND REDS.

Cocks, 2.—1st and 2nd, Ottawa Poultry Yards.

Hens, 2.—1st and 2nd, Ottawa Poultry Yards.

Cockerels, 3.—1st, 2nd and 3rd, Ottawa Poultry Yards.

Pullets, 3.—1st, 2nd and 3rd, Ottawa Poultry Yards.

BLACK RED GAME.

Cocks, 3.—1st, F. Wales; 2nd, Telfer Bros.; 3rd, W. Barber.

Hens, 4.—1st, W. Barber; 2nd, F. Wales; 3rd, Telfer Bros.; 4th, W. H. Reid.

Cockerels, 3.—1st, F. Wales; 2nd and 3rd, W. Barber.

Pullets, 5.—1st, F. Wales; 2nd and 3rd, W. Barber; 4th, W. H. Reid.

BROWN RED GAME.

Cocks, 3.—1st, W. Barber; 2nd and 3rd, Telfer Bros.

Hens, 5.—1st, W. Barber; 2nd and 3rd, W. J. Teale; 4th, Telfer Bros.

Cockerels, 1.—1st, W. Barber.

Pullets, 3.—1st, W. Barber; 2nd, W. J. Teale; 3rd, W. J. Teale.

DUCKWING GAME.

Cocks, 2.—1st and 2nd, W. Barber.
Hens, 2.—1st and 2nd, W. Barber.
Cockerels, 2.—1st, Telfer Bros.; 2nd, W. Barber.

PILE GAME.

Cocks, 3.—1st, R. Oke; 2nd, Telfer Bros.; 3rd, W. H. Reid.
Hens, 5.—1st, R. Oke; 2nd, Telfer Bros.; 3rd, W. H. Reid; 4th, W. Barber.
Cockerels, 2.—1st, R. Oke; 2nd, Telfer Bros.
Pullets, 4.—1st, W. Barber; 2nd, W. J. Teale; 3rd and 4th, Telfer Bros.

INDIAN LACED GAME.

Cocks, 3.—1st, Chas. LaRose; 2nd, D. Cumming; 3rd, Dr. Pritchard.
Hens, 4.—1st, D. Cumming; 2nd, Dr. Pritchard; 3rd, B. Wright; 4th, C. LaRose.
Cockerels, 3.—1st, C. LaRose; 2nd and 3rd, Dr. Pritchard.
Pullets, 3.—1st, Chas. LaRose; 2nd and 3rd, Dr. Pritchard.

A. O. V. GAME.

Cocks, 2.—1st, G. & J. Bogue.
Hens, 5.—1st, W. Barber; 2nd, W. J. Teale; 3rd, G. & J. Bogue.
Cockerels, 3.—1st, W. Barber; 2nd, G. & J. Bogue.
Pullets, 3.—1st, W. J. Teale; 2nd, G. & J. Bogue.

OLD ENGLISH OR PIT GAME.

Cocks, 4.—1st, 2nd and 4th, E. H. Benjamin; 3rd, E. R. Frith.
Hens, 4.—1st, 3rd and 4th, E. H. Benjamin; 2nd, E. R. Frith.
Cockerels, 4.—1st, 3rd and 4th, E. H. Benjamin; 2nd, E. R. Frith.
Pullets, 4.—1st, 2nd and 4th, E. H. Benjamin; 3rd, E. R. Frith.

WHITE S. C. LEGHORNS.

Cocks, 10.—1st, D. McKeller; 2nd, T. S. Crouch; 3rd, Herb. Byshe.
Hens, 19.—1st and 2nd, Herb. Byshe; 3rd, D. McKeller; 4th, F. Wales; 5th, W. H. Carleton.
Cockerels, 15.—1st, Herb. Byshe; 2nd, T. S. Crouch; 3rd, F. Wales; 4th, D. McKeller.
Pullets, 19.—1st, Herb. Byshe; 2nd, W. C. Pranschke; 3rd and 4th, F. Wales; 5th, D. McKeller.

BROWN S. C. LEGHORNS.

Cocks, 3.—1st, F. Wales; 2nd, D. Cumming.
Hens, 11.—1st, F. Wales; 2nd, W. Pillar; 3rd, G. H. A. Collins.
Cockerels, 10.—1st, Gurney & McCue; 2nd, J. F. Snetsinger; 3rd, J. D. Norrie.
Pullets, 13.—1st and 2nd, Gurney & McCue; 3rd, F. Wales; 4th, D. Cumming.

BLACK LEGHORNS.

Cocks, 3.—1st, A. & T. Readwin; 2nd and 3rd, W. M. Osborne.
Hens, 6.—1st and 2nd, W. M. Osborne; 3rd, R. Oke.
Cockerels, 6.—1st and 2nd, W. M. Osborne; 3rd, A. G. H. Luxton.
Pullets, 5.—1st, 2nd and 3rd, W. M. Osborne.

S. C. BUFF LEGHORNS.

Cocks, 2.—1st, W. Pillar.
Hens, 1.—1st, W. Pillar.
Cockerels, 4.—1st, Rev. S. S. Anderson; 2nd, A. C. Depres; 3rd, W. Pillar.
Pullets, 3.—1st and 2nd, Rev. S. S. Anderson; 3rd, W. Pillar.

R. C. BROWN LEGHORNS.

Cocks, 1.—1st, Wm. McNeil.
Hens, 3.—1st and 2nd, Wm. McNeil.
Cockerels, 2.—1st, Wm. McNeil; 2nd, B. Wright.
Pullets, 3.—1st and 3rd, Wm. McNeil; 2nd, B. Wright.

A. O. V. R. C. LEGHORNS.

Cockerels, 2.—1st, A. A. Armstrong.

Pullets, 2.—1st, A. A. Armstrong.

SPANISH.

Cocks, 2.—1st, J. H. Warrington; 2nd, G. & J. Bogue.

Hens, 3.—1st and 3rd, J. H. Warrington; 2nd, G. & J. Bogue.

Cockerels, 2.—1st, W. B. Nantel; 2nd, G. & J. Bogue.

Pullets, 3.—1st and 3rd, J. H. Warrington; 2nd, G. & J. Bogue.

ANDALUSIANS.

Cocks, 2.—1st and 2nd, Chas. LaRose.

Hens, 2.—1st and 2nd, Chas. LaRose.

Cockerels, 5.—1st, F. Wales; 2nd and 3rd, Chas. LaRose.

Pullets, 5.—1st, W. P. Carswell; 2nd, Chas. LaRose; 3rd, F. Wales.

BLACK MINORCAS.

Cocks, 5.—1st, Ottawa Poultry Yards; 2nd, W. L. Montgomery; 3rd, L. V. Zavitz; 4th, Garland & Gilchrist.

Hens, 12.—1st, Ottawa Poultry Yards; 2nd and 3rd, Garland & Gilchrist; 4th, E. R. Frith.

Cockerels, 11.—1st, E. R. Frith; 2nd and 3rd, Garland and Gilchrist; 4th, J. D. Norrie.

Pullets, 18.—1st, Garland & Gilchrist; 2nd, 3rd and 4th, Wm. Ellis; 5th, L. V. Zavitz.

WHITE MINORCAS.

Cocks, 1.—1st, W. M. Osborne.

Hens, 3.—1st, 2nd and 3rd, W. M. Osborne.

Cockerels, 1.—1st, W. M. Osborne.

Pullets, 3.—1st, G. A. Holbrook; 2nd and 3rd, W. M. Osborne.

BUFF ORPINGTONS.

Cocks, 4.—1st and 2nd, A. W. E. Hellyer; 3rd, R. Robertson.

Hens, 5.—1st, 2nd and 3rd, A. W. E. Hellyer.

Cockerels, 8.—1st, 2nd and 3rd, A. W. E. Hellyer.

Pullets, 14.—1st, 2nd, 3rd and 4th, A. W. E. Hellyer.

A. O. C. ORPINGTONS.

Hens, 2.—1st, W. J. Annand.

Cockerels, 5.—1st, Geo. Emmett; 2nd, Chas. LaRose; 3rd, W. J. Annand.

Pullets, 8.—1st, W. L. Montgomery; 2nd, W. J. Annand; 3rd, L. W. Whitney.

SILVER GREY DORKINGS.

Cocks, 2.—1st, J. H. Warrington.

Hens, 2.—1st, J. H. Warrington.

Pullets, 2.—1st, G. & J. Bogue.

COLORED DORKINGS.

Cocks, 2.—1st, W. H. Reid; 2nd, J. H. Warrington.

Hens, 3.—1st and 2nd, J. H. Warrington; 3rd, W. H. Reid.

Cockerels, 2.—1st, J. H. Warrington; 2nd, W. H. Reid.

Pullets, 3.—1st and 2nd, J. H. Warrington.

WHITE DORKINGS.

Cocks, 1.—1st, J. H. Warrington.

Hens, 3.—1st, 2nd and 3rd, J. H. Warrington.

Cockerels, 3.—1st, 2nd and 3rd, J. H. Warrington.

Pullets, 3.—1st, 2nd and 3rd, J. H. Warrington.

HOUDANS.

Cocks, 4.—1st, W. H. Reid; 2nd, G. & J. Bogue; 3rd, F. Wales.
Hens, 4.—1st, F. Wales; 2nd, G. & J. Bogue; 3rd, W. H. Reid.
Pullets, 2.—1st, G. & J. Bogue; 2nd, W. H. Reid.

A. O. V. FRENCH.

Cocks, 4.—1st and 3rd, G. & J. Bogue; 2nd, J. H. Warrington.
Hens, 4.—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.
Cockerels, 4.—1st, R. Oke; 2nd and 3rd, G. & J. Bogue.
Pullets, 5.—1st and 3rd, G. & J. Bogue; 2nd, R. Oke.

BLACK HAMBURGS.

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, B. Wright.
Cockerels, 4.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, W. Pillar.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, G. A. Holbrook.

GOLDEN PENCILLED HAMBURGS.

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, R. Oke.
Cockerels, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Chas. LaRose.
Pullets, 3.—1st, R. Oke; 2nd, Wm. McNeil.

SILVER PENCILLED HAMBURGS.

Cocks, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Hens, 2.—1st, Wm. McNeil; 2nd, R. Oke.
Cockerels, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Chas. LaRose.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Chas. LaRose.

GOLDEN SPANGLED HAMBURGS.

Cocks, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, B. Wright.
Hens, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, B. Wright.
Cockerels, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, B. Wright.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, R. Oke.

SILVER SPANGLED HAMBURGS.

Cocks, 4.—1st, Wm. McNeil; 2nd, W. Plante; 3rd, J. F. Snetsinger
Hens, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, W. Plante.
Cockerels, 2.—1st, R. Oke; 2nd, B. Wright.
Pullets, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, J. S. Snetsinger.

RED CAPS.

Cocks, 2.—1st, G. & J. Bogue; 2nd, J. H. Warrington.
Hens, 3.—1st and 3rd, J. H. Warrington; 2nd, G. & J. Bogue.
Cockerels, 2.—1st and 2nd, G. & J. Bogue.
Pullets, 3.—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington

W. C. B. POLANDS.

Cocks, 4.—1st, Wm. McNeil; 2nd, W. B. Nantel; 3rd, F. Wales.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, F. Wales.
Cockerels, 2.—1st and 2nd, Wm. McNeil.
Pullets, 3.—1st, W. B. Nantel; 2nd and 3rd, Wm. McNeil.

GOLDEN POLANDS.

Cocks, 2.—1st and 2nd, Wm. McNeil.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Cockerels, 3.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, G. & J. Bogue.

SILVER POLANDS.

Cocks, 2.—1st, W. B. Nantel; 2nd, Wm. McNeil.
Hens, 3.—1st, Wm. McNeil; 2nd, W. B. Nantel; 3rd, Wm. McNeil.
Cockerels, 3.—1st, G. & J. Bogue; 2nd, Wm. McNeil; 3rd, W. B. Nantel.
Pullets, 3.—1st, G. & J. Bogue; 2nd, Wm. McNeil; 3rd, W. B. Nantel.

WHITE POLANDS.

Cocks, 3.—1st, 2nd and 3rd, Wm. McNeil.
Hens, 3.—1st, 2nd and 3rd, Wm. McNeil.
Cockerels, 3.—1st, 2nd and 3rd, Wm. McNeil.
Pullets, 3.—1st, 2nd and 3rd, Wm. McNeil.

A. O. V. POLANDS.

Cocks, 3.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Hens, 3.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.
Cockerels, 3.—1st and 3rd, Wm. McNeil; 2nd, G. & J. Bogue.
Pullets, 3.—1st, G. & J. Bogue; 2nd and 3rd, Wm. McNeil.

A. O. V. FOWLS.

Cocks, 4.—1st and 3rd, Wm. McNeil; 2nd, R. Oke.
Hens, 4.—1st, R. Oke; 2nd and 3rd, Wm. McNeil.
Cockerels, 3.—1st, R. Oke; 2nd Wm. McNeil; 3rd, G. & J. Bogue.
Pullets, 4.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Wm. McNeil.

BLACK RED GAME BANTAMS.

Hens, 2.—1st, W. Barber; 2nd, W. H. Reid.
Pullets, 2.—1st, W. H. Reid; 2nd, W. Barber.

BROWN RED GAME BANTAMS.

Cocks, 1.—1st, Wm. McNeil.
Hens, 3.—1st and 2nd, Wm. McNeil; 3rd, W. H. Reid.
Cockerels, 1.—1st, W. H. Reid.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, W. H. Reid.

DUCKWING GAME BANTAMS.

Cocks, 3.—1st, W. Barber; 2nd, B. Wright; 3rd, W. H. Reid.
Hens, 3.—1st, W. Barber; 2nd, B. Wright; 3rd, W. H. Reid.
Cockerels, 3.—1st, W. H. Reid; 2nd, W. Barber; 3rd, B. Wright.
Pullets, 4.—1st and 2nd, B. Wright; 3rd, W. H. Reid; 4th, W. Barber.

PILE GAME BANTAMS.

Cocks, 2.—1st, W. Barber.
Hens, 2.—1st, W. Barber; 2nd, B. Wright.
Cockerels, 2.—1st and 2nd, W. Barber.
Pullets, 3.—1st and 2nd, W. Barber; 3rd, B. Wright.

A. O. C. GAME BANTAMS.

Cocks, 3.—1st, 2nd and 3rd, H. B. Donovan.
Hens, 3.—1st, 2nd and 3rd, H. B. Donovan.
Cockerels, 3.—1st, 2nd and 3rd, H. B. Donovan.
Pullets, 3.—1st, 2nd and 3rd, H. B. Donovan.

GOLDEN SEBRIGHT BANTAMS.

Cocks, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Chas. LaRose; 4th, G. & J. Bogue.
Hens, 4.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, G. & J. Bogue; 4th, Chas. LaRose.
Cockerels, 4.—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, R. Oke; 4th, Geo. Hawley.
Pullets, 6.—1st, R. Oke; 2nd, G. & J. Bogue; 3rd, Wm. McNeil; 4th, Chas. LaRose.

SILVER SEBRIGHT BANTAMS.

Cocks, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, Wm. McNeil.
Hens, 4.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, W. H. Reid; 4th, Wm. McNeil.
Cockerels, 4.—1st, Wm. McNeil; 2nd, G. & J. Bogue; 3rd, R. Oke; 4th, W. H. Reid.
Pullets, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, G. & J. Bogue.

ROSE COMB BLACK BANTAMS.

Cocks, 4.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, Ottawa P. Yards; 4th, W. H. Reid.
Hens, 3.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, W. H. Reid.
Cockerels, 5.—1st, Wm. McNeil; 2nd, R. Oke; 3rd, G. & J. Bogue; 4th, Chas. LaRose.
Pullets, 5.—1st, Wm. McNeil; 2nd, Chas. LaRose; 3rd, R. Oke; 4th, G. & J. Bogue.

BUFF COCHIN BANTAMS.

Cocks, 4.—1st, Wm. McNeil; 2nd, W. Plante; 3rd, Doidge & McNeil; 4th, A. C. Depres.
Hens, 5.—1st and 2nd, Wm. McNeil; 3rd, W. Plante; 4th, Doidge & McNeil.
Cockerels, 6.—1st and 3rd, Wm. McNeil; 2nd and 4th, Doidge & McNeil.
Pullets, 7.—1st and 2nd, Wm. McNeil; 3rd, Doidge & McNeil; 4th, A. C. Depres.

WHITE COCHIN BANTAMS.

Cocks, 3.—1st and 3rd, Doidge & McNeil; 2nd, Wm. McNeil.
Hens, 4.—1st and 2nd, Wm. McNeil; 3rd and 4th, Doidge and McNeil.
Cockerels, 3.—1st and 3rd, Wm. McNeil; 2nd, Doidge & McNeil.
Pullets, 3.—1st and 2nd, Wm. McNeil; 3rd, Doidge & McNeil.

A. O. V. COCHIN BANTAMS.

Cocks, 4.—1st and 2nd, Doidge & McNeil; 3rd, A. W. Bell; 4th, Chas. LaRose.
Hens, 6.—1st and 2nd, Doidge & McNeil; 3rd, A. W. Bell; 4th, Chas. LaRose.
Cockerels, 3.—1st and 2nd, Doidge & McNeil; 3rd, A. W. Bell.
Pullets, 6.—1st and 3rd, Doidge & McNeil; 2nd, A. W. Bell; 4th, Chas. LaRose.

JAPANESE BANTAMS.

Cocks, 3.—1st and 3rd, R. Oke; 2nd, Wm. McNeil.
Hens, 3.—1st and 2nd, R. Oke; 3rd, Wm. McNeil.
Cockerels, 3.—1st and 2nd, R. Oke; 3rd, Wm. McNeil.
Pullets, 3.—1st and 2nd, R. Oke; 3rd, Wm. McNeil.

A. O. C. ORNAMENTAL BANTAMS.

Cocks, 3.—1st, R. Oke; 2nd, W. H. Reid; 3rd, Wm. McNeil.
Hens, 3.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, G. & J. Bogue.
Cockerels, 5.—1st, Wm. McNeil; 2nd G. & J. Bogue; 3rd, R. Oke; 4th, W. Hartnett.
Pullets, 5.—1st, R. Oke; 2nd, Wm. McNeil; 3rd, W. H. Reid; 4th, G. & J. Bogue.

BRONZE TURKEYS.

Cocks, 2.—1st, Geo. R. Bradley; 2nd, A. Thompson.
Hens, 3.—1st, D. Cumming; 2nd, Geo. R. Bradley; 3rd, A. Thompson.
Cockerels, 4.—1st and 3rd, A. Thompson; 2nd, D. Cumming.
Pullets, 5.—1st, A. Thompson; 2nd, D. Cumming.

WHITE TURKEYS.

Cocks, 1.—1st, A. Thompson.
Hens, 3.—1st and 2nd, A. Thompson; 3rd, D. Cumming.
Cockerels, 1.—1st, A. Thompson.
Pullets, 2.—1st and 2nd, A. Thompson.

A. O. V. TURKEYS.

Cocks, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.
Hens, 3.—1st, A. Thompson.
Cockerels, 4.—1st and 2nd, A. Thompson.
Pullets, 4.—1st and 2nd, A. Thompson; 3rd, A. G. H. Luxton.

TOULOUSE GEESE.

Ganders, 3.—1st and 2nd, A. Thompson; 3rd, A. G. H. Luxton.
Geese, 3.—1st and 2nd, A. Thompson; 3rd, A. G. H. Luxton.
Ganders, 1905, 3.—1st, A. Thompson; 2nd, D. Cumming.
Geese, 1905, 3.—1st, D. Cumming; 2nd, A. Thompson; 3rd, A. G. H. Luxton.

EMBDEN GEESE.

Ganders, 4.—1st and 2nd, A. Thompson; 3rd, J. A. Richardson.
Geese, 4.—1st, A. Thompson; 2nd, J. A. Richardson; 3rd, F. Wales.
Gander, 1905, 1.—1st, A. Thompson.
Geese, 1905, 1.—1st, A. Thompson.

CHINESE GEESE.

Ganders, 3.—1st, A. Thompson; 2nd, A. G. H. Luxton; 3rd, W. B. Nantel.
Geese, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.
Ganders, 1905, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.
Geese, 1905, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.

A. O. V. GEESSE.

Ganders, 3.—1st, A. G. H. Luxton; 2nd and 3rd, A. Thompson.
Geese, 3.—1st and 3rd, A. Thompson; 2nd, A. G. H. Luxton.
Ganders, 1905, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.
Geese, 1905, 2.—1st, A. Thompson; 2nd, A. G. H. Luxton.

ROUEN DUCKS.

Drakes, 2.—1st, G. & J. Bogue; 2nd, A. Thompson.
Ducks, 1.—1st, A. Thompson.
Drakes, 1905, 2.—1st, A. Thompson; 2nd, D. Cumming.
Ducks, 1905, 3.—1st, G. & J. Bogue; 2nd, A. Thompson; 3rd, D. Cumming.

PEKIN DUCKS.

Drakes, 2.—1st, A. Thompson.
Ducks, 3.—1st, D. Cumming; 2nd, A. Thompson.
Drakes, 1905, 9.—1st and 2nd, A. Thompson; 3rd, D. Cumming.
Ducks, 1905, 7.—1st and 2nd, A. Thompson; 3rd, Homewood Farm.

AYLESBURY DUCKS.

Drakes, 1.—1st, A. Thompson.
Ducks, 1.—1st, A. Thompson.
Drakes, 1905, 2.—1st and 2nd, A. Thompson.
Duck, 1905, 1.—1st, A. Thompson.

CAYUGA DUCKS.

Drakes, 1.—1st, A. Thompson.
Ducks, 3.—1st, J. H. Warrington; 2nd, A. Thompson; 3rd, G. & J. Bogue.
Drakes, 1905, 3.—1st, G. & J. Bogue; 2nd, J. H. Warrington; 3rd, A. Thompson.
Ducks, 1905, 2.—1st, G. & J. Bogue; 2nd, A. Thompson.

A. O. V. DUCKS.

Drakes, 4.—1st, B. Wright; 2nd, A. Thompson; 3rd, A. G. H. Luxton.
Ducks, 3.—1st, A. Thompson; 2nd, B. Wright; 3rd, A. G. H. Luxton.
Drakes, 1905, 4.—1st, A. G. H. Luxton; 2nd, B. Wright; 3rd, A. Thompson.
Ducks, 1905, 4.—1st, A. G. H. Luxton; 2nd, A. Thompson; 3rd, F. Wales.

SELLING CLASS.

Dorking, Males, 6.—1st, G. & J. Bogue; 2nd, A. G. H. Luxton; 3rd, J. H. Warrington.
Dorking, Females, 7.—1st and 2nd, G. & J. Bogue; 3rd, J. H. Warrington.
Plymouth Rock, Males, 21.—1st and 3rd, F. A. James; 2nd, Smith & Browne; 4th, M. C. Neate.
Plymouth Rock, Females, 12.—1st, D. Cumming; 2nd, Geo. Robertson; 3rd, S. Short.
Wyandotte, Males, 22.—1st, Geo. Higman; 2nd, Wm. Delary; 3rd and 4th, G. Lake.
Wyandotte, Females, 10.—1st and 3rd, Wm. Delary; 2nd, G. Lake; 4th, W. J. Annand.
Orpington, Males, 9.—1st, A. W. E. Hellyer; 2nd, W. H. Slinn; 3rd, F. Wales.
Orpington, Females, 1.—1st, F. Wales.
Minorca, Males, 10.—1st, E. R. Frith; 2nd, Garland & Gilchrist; 3rd, A. Thompson.
Minorca, Females, 13.—1st, Wm. Ellis; 2nd, Garland & Gilchrist; 3rd, Wm. Ellis.
Leghorn, Males, 17.—1st, 2nd and 3rd, W. H. Carleton.
Leghorn, Females, 8.—1st, G. Lake; 2nd, W. L. Montgomery; 3rd, F. Wales.

DRESSED POULTRY.

Pair, Brahmas or Cochins.—1st, G. & J. Bogue; 2nd and 3rd, A. A. Armstrong.
Pair, Java or Langshans.—1st, Jos. Tomalin; 2nd, W. J. Teale; 3rd, G. & J. Bogue.
Pair, Plymouth Rocks.—1st, 2nd and 3rd, A. A. Armstrong; 4th, Geo. Thomas.
Pair, Wyandottes.—1st and 3rd, Geo. R. Bradley; 2nd, A. A. Armstrong; 4th, G. & J. Bogue.
Pair, Minorcas, Andalusians or Leghorns.—1st and 4th, Thos. S. Crouch; 2nd and 3rd, A. A. Armstrong.
Pair, Dorkings.—1st, 2nd and 3rd.—A. A. Armstrong; 4th, G. & J. Bogue.
Pair, Orpingtons.—1st and 2nd, A. A. Armstrong; 3rd and 4th, W. H. Slinn.
Best Pair.—1st, A. A. Armstrong.

Turkey, Male, any age.—1st, A. A. Armstrong; 2nd, W. Stewart & Son.
Turkey, Female, any age.—1st, 2nd and 3rd, A. A. Armstrong; 4th, W. Stewart & Son.
Turkey, Male, 1905.—1st and 2nd, A. A. Armstrong; 3rd, W. Stewart & Son; 4th, Jos. Tomalin.
Turkey, Female, 1905.—1st, Jos. Tomalin; 2nd, 3rd and 4th, A. A. Armstrong.
White Goose.—1st, 2nd and 4th, A. A. Armstrong; 3rd, A. Thompson.
Colored Goose.—1st, 2nd and 3rd, A. A. Armstrong.
Pair, White Ducks.—1st, 2nd and 3rd, A. A. Armstrong.
Pair, Colored Ducks.—1st, Jos. Tomalin; 2nd, A. Thompson; 3rd and 4th, A. A. Armstrong.
Pair, Squabs.—1st, A. A. Armstrong; 2nd and 3rd, Jos. Tomalin.
Dozen Eggs, White.—1st, Ottawa Poultry Yards; 2nd and 3rd, T. S. Crouch.
Dozen Eggs, Colored.—1st, G. Lake; 2nd, Geo. R. Bradley; 3rd, Ottawa Poultry Yards.

PIGEONS.

BLACK CARRIER.

Cocks, 3.—1st and 2nd, W. H. Reid; 3rd, L. Ridler.
Hens, 2.—1st and 2nd, W. H. Reid.

A. O. S. C. CARRIER.

Cocks, 1.—1st, W. H. Reid. *Hens, 2.*—1st, W. H. Reid; 2nd, L. Ridler.

WHITE POUTER.

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens, 1.*—1st, W. H. Reid.

A. O. C. POUTER.

Cocks, 1.—1st, L. Ridler.

PIGMY POUTER.

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens, 2.*—1st and 2nd, W. H. Reid.

L. F. TUMBLER.

Hens, 2.—1st and 2nd, W. H. Reid. *Cocks, 2.*—1st and 2nd, W. H. Reid.

CLEAN LEG TUMBLER.

Cocks, 4.—1st and 2nd, W. H. Reid; 3rd, Burrmont Pigeon Lofts.
Hens, 4.—1st and 2nd, W. H. Reid; 3rd, Burrmont Pigeon Lofts.

S. F. TUMBLER.

Cocks, 3.—1st and 2nd, W. H. Reid. *Hens, 1.*—1st, W. H. Reid.

RED BARB.

Hens 1.—1st, A. & T. Readwin.

BLACK BARB.

Cocks, 2.—1st and 2nd, A. & T. Readwin. *Hens, 2.*—1st and 2nd, A. & T. Readwin.

WHITE TRUMPETER.

Hens 1.—1st, A. & T. Readwin.

A. O. S. C. TRUMPETER.

Cocks, 3.—1st, Burrmont Pigeon Lofts; 2nd and 3rd, W. H. Reid.
Hens, 2.—1st and 2nd, W. H. Reid.

RED OR YELLOW JACOBIN

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens*, 2.—1st and 2nd, W. H. Reid.

WHITE JACOBIN.

Cocks, 1.—1st, W. H. Reid.

A. O. S. C. JACOBIN.

Cocks, 3.—1st and 3rd, W. H. Reid; 2nd, Burrmont Pigeon Lofts.

Hens, 1.—1st, W. H. Reid.

ORIENTAL FRILLS.

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens*, 2.—1st and 2nd, W. H. Reid.

R. C. ANTWERP.

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens*, 2.—1st and 2nd, W. H. Reid.

SILVER DUN.

Cocks, 2.—1st and 2nd, W. H. Reid. *Hens*, 2.—1st and 2nd, W. H. Reid.

WHITE FANTAIL.

Cocks, 4.—1st, W. H. Reid; 2nd, Burrmont Pigeon Lofts; 3rd, A. & T. Readwin.

Hens, 4.—1st, W. H. Reid; 2nd and 3rd, L. Ridler.

BLUE FANTAIL.

Cocks, 4.—1st, L. Ridler; 2nd, W. H. Reid; 3rd, A. & T. Readwin.

Hens, 2.—1st, L. Ridler; 2nd, W. H. Reid.

A. O. S. C. FANTAIL.

Cocks, 5.—1st, L. Ridler; 2nd, A. & T. Readwin; 3rd, W. H. Reid.

Hens, 6.—1st and 3rd, L. Ridler; 2nd, A. & T. Readwin.

BLACK MAGPIE.

Cocks, 4.—1st and 2nd, S. Higman; 3rd, L. Ridler.

Hens, 4.—1st and 2nd, S. Higman; 3rd, L. Ridler.

RED OR YELLOW MAGPIE.

Cocks, 6.—1st and 2nd, S. Higman; 3rd, L. Ridler.

Hens, 5.—1st and 3rd, S. Higman; 2nd, L. Ridler.

A. O. C. MAGPIE.

Cocks, 2.—1st, S. Higman; 2nd, A. & T. Readwin.

Hens, 3.—1st, S. Higman; 2nd, A. & T. Readwin; 3rd, W. Plante.

BLUE OR BLACK CHEQUERED SHOW HOMER.

Cocks, 1.—1st, Burrmont Pigeon Lofts. *Hens*, 1.—1st, Burrmont Pigeon Lofts.

BLACK SWALLOW.

Cocks, 3.—1st, W. Plante; 2nd and 3rd, W. H. Reid.

Hens, 2.—1st and 2nd, W. H. Reid.

A. O. S. C. SWALLOW.

Cocks, 3.—1st and 2nd, W. H. Reid; 3rd, W. Plante.

Hens, 2.—1st and 2nd, W. H. Reid.

A. O. C. SWALLOW.

Cocks, 5.—1st, W. H. Reid; 2nd, W. Plante; 3rd, L. Ridler.

Hens, 5.—1st and 3rd, W. H. Reid; 2nd, L. Ridler.

ARCHANGELS.

Cocks, 3.—1st and 2nd, L. Ridler; 3rd W. H. Reid.
Hens, 5.—1st, L. Ridler; 2nd, L. Ridler; 3rd, W. H. Reid.

NUNS.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens 3.—1st, A. T. Readwin; 2nd and 3rd, W. H. Reid.

A. C. AFRICAN OWLS.

Cocks, 2.—1st and 2nd, W. H. Reid.
Hens, 4.—1st and 2nd, W. Plante; 3rd, W. H. Reid.

OWLS, ENGLISH, BLUE OR SILVER.

Cocks, 1.—1st, W. H. Reid. *Hens*, 1.—1st, W. H. Reid

A. O. V. OWL.

Cocks, 2.—1st, W. Plante; 2nd, W. J. Teale.
Hens, 4.—1st, W. J. Teale.

BLACK TURBIT.

Cocks, 6.—1st and 2nd, A. & T. Readwin; 3rd, W. H. Reid.
Hens, 4.—1st and 2nd, W. H. Reid; 3rd, S. Higman.

A. O. C. TURBIT.

Cocks, 5.—1st, W. H. Reid; 2nd and 3rd, A. & T. Readwin.
Hens, 5.—1st and 2nd, W. H. Reid; 3rd, A. & T. Readwin.

A. O. S. V. PIGEONS.

Cocks, 6.—1st, A. & T. Readwin; 2nd and 3rd, Ottawa Poultry Yards.
Hens, 5.—1st, A. & T. Readwin; 2nd and 3rd, Ottawa Poultry Yards.

DOVES.

Cocks, 2.—1st, W. H. Reid.

PEA FOWL.

Pair, 3.—1st and 2nd, J. A. Richardson.

BELGIAN HARES, OVER 6 MONTHS.

Bucks, 1.—1st, Ottawa Poultry Yards. *Does*, 1.—1st, Ottawa Poultry Yards.

Fourth Annual Clydesdale and Shire Show.

Clydesdale Stallions, Foaled Previous to January 1st, 1902.

1st.—Olympus (imp.) [4555] (11840), bay, white face, hind legs white, foaled May 2, 1901. Bred by Wm. Campbell, Barwinnock, Port William, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Up to Time (10475); dam, Olympia (14962), by Prince Sturdy (10112).

2nd.—The Rejected (imp.) [4800] (11969), black, white blaze, fore leg and off hind leg white, white mark inside of near hind leg, foaled July 25, 1900. Bred by And. Gemmell, Gainford, Scotland. Imported and exhibited by R. Ness & Son, Howick, Que.; sire, Ethiopia (5750); dam, Lady Carruchan (12806), by Prince of Carruchan (8151).

3rd.—Prince of London (imp.) [4586] (11859), brown, stripe on face, one hind foot and ankle white, foaled April, 1901. Bred by Rich. Dunn, Udston, Hamilton, Scotland. Imported and exhibited by O. Sorby, Guelph, Ont.; sire, Baron's Pride (9122); dam, Countess (15014), by Royal Gartly (9844).

4th.—Breadalbane (imp.) [4558] (11637), bay, white face, four white legs, foaled Aug. 17, 1901. Bred by Alex. Guild, Aberlady, Scotland. Exhibited by T. H. Hassard, Millbrook, Ont.; sire, Hiawatha (10067); dam, Lady Gartly (13834), by Royal Gartly (9844).

5th.—Prince Orla (imp.) [4493] (11471), bay, white on face, four white legs, foaled May 5, 1900. Bred by Jas. A. Duncan, Wester Greens, Lossiemouth, Scotland. Imported and exhibited by Wm. Duncan, Stroud, Ont.; sire, Prince Harold (imp.) [4492] (9973); dam, Dandie Macgregor (6679), by Macgregor (1487).

6th.—Favourite's Heir (imp.) [4545] (11705), brown, white face, white spot on near fore leg, other three legs white, foaled May 26, 1901. Bred by Jas. Sands, Greenfoot, Scotland. Imported and exhibited by R. Ness & Son, Howick, Que.; sire, Royal Favourite (10630); dam, Greenfoot Maggie (14382), by Ardargie (7431).

7th.—Senator's Heir (imp.) [3989] (11525), brown, white stripe on face, off fore and hind legs white, foaled May, 1899. Bred by R. & J. Kerr, Lochlane, Crieff, Scotland. Imported and exhibited by R. Ness & Son, Howick, Que.; sire, Senator (10283); dam, Lady Summit (14638), by The Summit (9442).

8th.—Cairngaon (imp.) [4757] (12073), brown, white hind ankles and stripe on face, foaled 1901. Bred by Peter McCosh, Cairngaon, Stranraer, Scotland. Imported by Graham Bros., Claremont, Ont. Exhibited by Chas. Bennett, Russellton, Ont.; sire, Lord Douglas (11093); dam, Mary Bruce, by The Observer (8338).

9th.—Baron MacEachran (imp.) [4587] (12035), bay, white stripe down face, three white legs, a little white on near fore ankle, foaled May 15, 1901. Bred by Wm. McBean, Cradlehall, Inverness, Scotland. Imported and exhibited by O. Sorby, Guelph, Ont.; sire, MacEachran (9792); dam, Jup, by Baron Burgie (10029).

Clydesdale Stallions, Foaled in 1902.

1st.—Mascot (imp.) [4554] (12243), bay, white face, three white feet, near fore foot and leg black, foaled May 26, 1902. Bred by A. & W. Montgomery, Netherhall & Banks, Kirkeudbright, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Baron's Pride (9122); dam, Borgue Honey (12698), by Macgregor (1487).

2nd.—Recruit (imp.) [4583] (12299), bay, white face, three white legs, near fore leg black, foaled April, 1902. Bred by Robt. Frederick, Drumflower, Dunragit, Scotland. Exhibited by Graham & Renfrew, Bedford Park, Ont.; sire, Woodland Gartly (10663); dam, Hecuba (15506), by Baron's Pride (9122).

3rd.—Prince Cairnbrogie (imp.) [4785] (12697), bay, stripe, near hind fetlock white, foaled May, 1902. Bred by John Marr, Cairnbrogie, Old Meldrum, Scotland. Imported by Smith & Richardson, Columbus, Ont. Exhibited by Ancaster Clydesdale Association, Ancaster, Ont.; sire, Prince Thomas [4028] (10262); dam, Zehnetta [6259] (14702), by Pandora's Prince (10891).

4th.—Pearl Finder (imp.) [4557] (12689), bay, stripe on face, near fore and hind legs white, foaled 1902. Bred by Jno. Little, Bank House, Kilbride, Scotland. Imported and exhibited by T. H. Hasard, Millbrook, Ont.; sire, Lord Lothian (5998); dam, Daisy of the Bank, by Alleyford (1908).

5th.—Minmore (imp.) [4588] (12253), bay, white stripe on face, white hind pasterns, foaled April 30, 1902. Bred by Col. Smith Grant, Auchorachan, Glenlivet, Scotland.

Exhibited by Jas. Henderson, Belton, Ont.; sire, Pearl Oyster (10831); dam, Orissa Dean (4652), by Macgregor (1487).

6th.—Diamond (imp.) [4554] (12551), bay, ratch on face, little white inside of hind foot, foaled May, 1902. Bred by Hugh Wright, Alticry, Port William, Scotland. Imported and exhibited by R. Ness & Son, Howick, Que.; sire, Up To Time (10475); dam, Diamond Jubilee (Vol. 22, S.), by Royal Standard (9847).

7th.—Glenlivet (imp.) [4787] (12165), bay, white face, near legs both white, little white inside, foaled June 4, 1902. Bred by Robt. Turner, Cairnton of Boyndie, Portsoy, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Montrave Sentinel (10094); dam, May Montrose (13646), by Lord Montrose (7973).

8th.—Chipper Chief (imp.) [5022] (12526), bay, white stripe on face, hind legs and off fore foot white, foaled May 20, 1902. Bred by Archibald Crawford, Broughton Mains, Sorbit, Scot. Imported and exhibited by Dalgety Bros., Glencoe, Ont.; sire, Royal Chief (10876); dam, Lily of Carleton (16004), by King of the Roses (9927).

Clydesdale Stallions, Foaled in 1903.

1st.—Celtic Laird (imp.) [5413] (Vol. 28, S.), dark brown, stripe, three white feet, foaled April 25, 1903. Bred by Col. Geo. Smith Grant, Minmore, Glenlivet, Scotland. Imported by Graham Bros., Claremont, Ont. Exhibited by Graham & Renfrew, Bedford Park, Ont.; sire, Argus [3813] (10492); dam, Queen Bess [7463] (Vol. 21, S.), by Royalist [3065] (6242).

2nd.—Moncrieffe Baronet (imp.) [4767] (12679), bay, face and legs white, foaled June 1, 1903. Bred by T. McIntosh, Knowhead, Brechin, Scotland. Imported by Graham Bros., Claremont, Ont. Exhibited by Chas. Bennett, Russelton, Ont.; sire, Moncrieffe Marquis [2889] (9953); dam, Bessie Bell [5413] (14688), by Prince of Kyle (7155).

3rd.—Baron Richardson (imp.) [5320] (Vol. 28, S.), bay, ratch on face, four white legs, foaled July 6, 1903. Bred by Alex. MacIntosh, Greenhill, Houston, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Baron of Buchlyvie [5353] (11263); dam, Minnie of Greenhill [7335] (16213), by Sir Donald [7331] (10456).

4th.—Lord Durham (imp.) [4506] (Vol. 28, S.), black, broad stripe on face, near fore leg and hind legs white, foaled March 30, 1903. Bred by Jno. Clark, Hill House, Shadforth, Durham, England. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Lord Fauntleroy [3530] (10370); dam, Violet [7762] (Vol. 28, S.), by First Lifeguard [4504] (10061).

5th.—Blacon Prince (imp.) [5321] (12486), bay, white face, hind legs and one fore leg white, foaled May 28, 1903. Bred by Alex. McFarlane, Meikle Kilchattan, Rothesay, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Pride of Blacon [4072] (10837); dam, Maggie of Kilchattan [7308] (16202), by Prince Rosemount [5345] (9992).

6th.—Emulator (imp.) [4502] (Vol. 28, S.), dark bay, stripe on face, hind legs white, little white on fore hoofheads, foaled July 12 1903. Bred by Jas. Pettigrew, Bogside, Newmains, Scotland. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Hillhead Chief [5379] (10774); dam, Helen of Bogside [7752] (8166), by Commander [613] (2029).

7th.—Peerless Pride (imp.) [4584] (Vol. 28, S.), bay, white face, near fore and hind legs white, off fore ankle white, foaled July 1, 1902. Bred by Alex. Williamson, Sypland, Kirkcudbright, Scotland. Imported by Jno. A. Turner, Calgary, Alta. Exhibited by O. Sorby, Guelph, Ont.; sire, Peerless (10832); dam, Beulah (14452), by Baron's Pride (9122).

8th.—Banchory's Marcellus (imp.) [4556] (12430), bay, hind legs and near fore leg white, foaled May 1, 1903. Bred by T. J. Gardiner, Banchory, Coupar Angus, Scotland. Imported and exhibited by T. H. Hassard, Millbrook, Ont.; sire, Marcellus (11110); dam, Polly (11782), by Prince Lawrence (Vol. 7, S.).

Clydesdale Stallions, Foaled in 1904.

1st.—Blacon Chime (imp.) [5411] (Vol. 28, S.), bay face, near fore and hind feet white, foaled May 30, 1904. Bred by Hugh McFie, Ballycaul, Rothesay, Scotland. Imported by Graham Bros., Claremont, Ont. Exhibited by Graham & Renfrew, Bedford Park, Ont.; sire, Pride of Blacon [4072] (10837); dam, Rose of Ballycaul [7460] (16207), by Fickle Fashion [4641] (10546).

2nd.—Celtic Prince (imp.) [5323] (Vol. 28, S.), black, white face, off fore and both hind fetlocks white, foaled May 9, 1904. Bred by R. D. Barre Cunningham, Duchrae, New Galloway, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Everlasting [5346] (11331); dam, Flora Macdonald [7310] (16021), by Hiawatha [3430] (10067).

3rd.—Baron Smith (imp.) [5313] (Vol. 28, S.), brown, white on face, off fore foot and off hind leg white, near fore and near hind legs black outside, otherwise white, foaled May 27, 1904. Bred by Robt. Kerr, Wodhead, Newmilns, Ayrshire, Scotland. Imported and exhibited by Smith & Richardson, Columbus, Ont.; sire, Svlander [5310] (10933); dam, Maggie Maxwell [7232] (Vol. 28, S.), by Lord Edwin [3082] (10222).

4th.—Forglen Chief (imp.) [4529] (Vol. 28, S.), brown, stripe on face, hind legs white, foaled May 22, 1904. Bred by Sir Geo. Wm. Abercromby, Forglen House, Turiff, Scotland. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Hillhead Chief (imp.) [5379] (10774); dam, Carolina of Forglen [7803] (Vol. 23, S.), by Prince of Carruchan (8151).

5th.—Ardnahoe (imp.) [4501] (Vol. 28, S.), brown, stripe on face, four white legs, foaled May 1, 1904. Bred by Mrs. Ferguson, Ardnahoe, Bute, Scotland. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Pride of Blacon [4072] (10837); dam, Arran Lily [6564] (15495), by Mountain King [4973] (7074).

6th.—Gallant James (imp.) [Vol. 14] (Vol. 28, S.). Exhibited by And. Aitchison, Guelph, Ont.

Clydesdale Mares, Imported, those tracing to Imported Mares and those bred up from Canadian Mares, foaled previous to Jan. 1st, 1903.

1st.—Baron's Lily (imp.) [6148], bay, face and hind legs white, foaled May 27, 1902. Bred by J. C. Cleland, Little Sipland, Scotland. Imported by Graham Bros., Claremont, Ont. Exhibited by C. R. Bennett, Russellton, Ont.; sire, Baron's Pride [3067] (9122); dam, Lily of Spyland [5602] (14979), by Prince Romeo [3536] (8144).

2nd.—Chiming Bell (imp.) [7456] (Vol. 25, S.), brown, white face, near foot and hind legs white, foaled May 25, 1902. Bred by Wm. Nicholson, Bombie, Kirkcudbright, Scotland. Exhibited by C. R. Bennett, Russellton, Ont.; sire, Baron's Pride [3067] (9122); dam, Maggie of Blawquhairn [7474] (13107), by King of the Forest (1170).

3rd.—Miss Todd (imp.) [4785] (Vol. 25, S.), bay, ratch, four white legs, foaled 1900. Bred by H. Roger, Hillhead, Kilmarnock, Scotland. Exhibited by A. G. Gormley, Unionville, Ont.; sire, King's Cross [3153] (10070); dam, Clarinda of Hillhead [4852] (11964), by Lord Erskine [3603] (1744).

4th.—Madge of Hallcroft (imp.) [4776] (Vol. 24, S.), brown, star and small ratch, three white feet, foaled May 16, 1901. Bred by Maxwell C. Muirhead, Hallcroft, Dalbeattie, Scotland. Imported in 1903 by Smith & Richardson, Columbus, Ont. Exhibited by A. G. Gormley, Unionville, Ont.; sire, Ornament [3421] (10603); dam, Ursula [4860] (13985), by Flashwod's Best [3534] (9211).

5th.—Miss Gilmour (imp.) [7865] (Vol. 28, S.), brown, ratch on face, hind legs and one fore foot white, foaled May 20, 1902. Bred by Jas. Gilmour, Netherton, Carmunnock, Scotland. Imported and exhibited by T. H. Hassard, Millbrook, Ont.; sire, Pride of Airies (11454); dam, Vinesso (Vol. 28, S.), by Look Again (5972).

Clydesdale Mares, Imported, those tracing to Imported Mares and those bred up from Canadian Mares, foaled on or subsequent to Jan. 1st, 1903.

1st.—Fragrance (imp.) [7832] (Vol. 28, S.), bay, white face, four white legs, foaled 1903. Bred by Sam. White, Lugate, Stow, Scotland. Imported by S. J. Prouse, Ingersoll, Ont. Exhibited by Jas. Richardson, St. Paul's, Ont.; sire, Prince Fragrance (11460); dam, Blossom of Lugate (Vol. 28, S.), by A Small Scotch (10023).

2nd.—Queen of Maple Grove [6059], bay, one white hind foot and stripe on face, foaled June 27, 1903. Bred by R. Stewart, Winfield, Ont. Exhibited by A. G. Gormley, Unionville, Ont.; sire, Fullerton (imp.) [2370] (9910); dam, Riverside Corinne [2957], by Macmurchie (imp.) [2971] (8014).

3rd.—Lucetta (imp.) [7818] (Vol. 28, S.), bay, hind feet and one fore foot white, foaled 1903. Bred by Wm. Armstrong, Green, Rigg of Greta, Scotland. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Prince Tom [4145] (11149); dam, Fanny of Green [6293] (15929), by King's Gambit [4907] (9261).

4th.—Miss Harrison (imp.) [7864] (Vol. 28, S.), bay, fore feet dark, a little white on hind feet, foaled May 25, 1903. Bred by Anthony Harrison, Lowfield, Kirkoswald, Scotland. Imported and exhibited by T. H. Hassard, Millbrook, Ont.; sire, Montrave Laurence (10241); dam, Dinah (12720).

5th.—Rockhall Rosie (imp.) [7754] (Vol. 27, S.), bay, white stripe on face, off fore sock white, white hind stockings, foaled May 26, 1903. Bred by Jno. Muir, Rockhall Mains, Dumfries, Scotland. Imported and exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Rozelle [4394] (10638); dam, Nellie of Rockhall [7755] (16283), by Prince of Craigie [4503] (9367).

6th.—Gloriana (imp.) [7907] (Vol. 26, S.), bay, white stripe on face, hind feet white, near fore ankle white, foaled June 16, 1903. Bred by Jas. McLean, Auchneil, Stranraer, Scotland. Exhibited by W. T. McCaugherty, Lethbridge, Alta.; sire, Baden-Powell (10963); dam, Glory (15631), by Macgregor (1487).

Canadian Bred Clydesdale or Shire Stallions, foaled previous to Jan. 1st, 1904.

1st.—Erskine Lynedoch [4761], dark bay, ratch, near hind leg white, foaled May, 1903. Bred and exhibited by Jno. Vipond, Brooklin, Ont.; sire, Lord Lynedoch (imp.) 3004] 4113 (4530); dam, Jess Erskine [4768], by Erskine (imp.) [1652] (4986).

2nd.—Golden Conqueror [4251], chestnut, white face and feet, foaled July 27, 1902. Bred and exhibited by A. Doherty, Ellesmere, Ont.; sire, Cloth of Gold [2959] 962; dam, Daisy Belle [2596], by Bruce (imp.) [1595] (8496).

3rd.—Admiral [4805], bay, stripe, hind feet white, foaled April 28, 1902. Bred by Wm. Kersey, Coleraine, Ont. Exhibited by R. L. Graham, Schomberg, Ont.; sire, Vice-Admiral (imp.) [3447] (11225); dam, Grace Darling [6187], by Macneilage (imp.) [1117] (2992).

4th.—Prince Patrican [2442], dark bay, stripe on face, two white ankles, foaled May 22, 1898. Bred by D. & O. Sorby, Guelph, Ont. Exhibited by O. Sorby, Guelph; sire, Grandeur (imp.) [1724] 8202 (6814); dam, Princess Patrica [2312] 8051, by Prince Patrick (imp.) [2266] 6773 (8993).

5th.—Alexander Macqueen [3291], bay, face, off fore and both hind feet white, foaled April 20, 1901. Bred and exhibited by Jno. W. Cowie, Markham, Ont.; sire, Macqueen (imp.) [462] (5200); dam, Nellie Rosewood [3486], by Lord Wellington (imp.) [2962] 9977 (6981).

6th.—Duke of York [3209], bay, white face, near fore and hind feet white, foaled May 21, 1899. Bred by Wm. R. Moore, Almonte, Ont. Exhibited by R. Ness & Son, Howick, Que.; sire, Dandy Dinmont (imp.) [1372] (7631); dam, Miss Flashwood [1924], by International (imp.) [1423] (6853).

7th.—Canadian Lynedoch [5119], bay, four white legs, foaled May 10, 1902. Bred and exhibited by Robt. Ormerod, Brown's Corners, Ont.; sire, King Lynedoch [2378]; dam, Dolly Caignair [6715], by Caignair (imp.) [692] (2040).

Canadian Bred Clydesdale or Shire Stallions, foaled on or subsequent to Jan. 1, 1904.

1st.—Superior [5403], bay, off fore and hind feet white, stripe on face, foaled June 27, 1904. Bred by E. Tink & Sons, Columbus, Ont. Exhibited by Graham & Renfrew, Bedford Park, Ont.; sire, Cornerstone (imp.) [3505] (11016); dam, Fanny Tink [5063], by Granite [1913].

2nd.—Chief Harmony [5401], black, small stripe, front feet and hind legs white, foaled June 11, 1904. Bred and exhibited by Chas. Stewart, Bradford, Ont.; sire, Harmony (imp.) [2957] (10772); dam, Dolly Haddo [7427], by Haddo Chief (imp.) [1609] (7798).

3rd.—Newbie [4463], bay, stripe, off fore and both hind feet white, foaled June 30, 1904. Bred by Wm. Smith, Columbus, Ont. Exhibited by Smith & Richardson, Columbus, Ont.; sire, Ruler (imp.) [3974] (10895); dam, Newbie Jean 3rd [5779], by Sir Arthur (imp.) [1371] (6292).

4th.—Macqueen's Champion [5372], bay, star and snip, fore feet and hind legs white, foaled July 7, 1904. Bred and exhibited by Crawford Bros., Brown's Corners, Ont.; sire, Alexander Macqueen [3291]; dam, Bessie of Upper Springs [4399], by The Granite City (imp.) [709] (5397).

5th.—Donald McGregor [7855], bay, ratch on face, two hind and off front feet white, foaled June 21, 1904. Bred and exhibited by Alex. Doherty, Ellesmere, Ont.; sire, Lyon Macgregor (imp.) [2308] (10376); dam, Daisy Belle [2596], by Bruce (imp.) [1595] (8496).

6th.—Macqueen's Champion [5182], bay, stripe, near fore and both hind feet white, foaled May 20, 1904. Bred and exhibited by Jos. Burnett, Elgin Mills, Ont.; sire, Macqueen (imp.) [462] (5200); dam, Jane of Markham [2438], by Goldfinder (imp.) [714] (3661).

Canadian Bred Clydesdale or Shire Mares, foaled previous to Jan. 1, 1905.

1st.—Baroness [7917], bay, foaled May, 1902. Bred by Jno. McLaren, Sengog, Ont. Exhibited by Smith & Richardson, Columbus, Ont.; sire, Lakeview Laddie [2477]; dam, Blacksmith Maid, by Blacksmith (imp.) [1042] (5551).

2nd.—Heather Erskine [4771], light bay, stripe on face, foaled May, 1902. Bred by Jno. Vipond, Brooklin, Ont. Exhibited by J. W. Cowie, Markham, Ont.; sire, Royal Cairnton (imp.) [4019] (10875); dam, Jess Erskine [4768], by Erskine (imp.) [1652] (4986).

3rd.—Lady Union Bank [6027], light bay, stripe, hind legs white, foaled June 20, 1901. Bred and exhibited by Jas. Richardson, St. Paul's, Ont.; sire, Union Bank (imp.) [4209] (10016); dam, Victoria R. [5478], by Craigievar (imp.) [1330] (6639).

4th.—June [7819], black, white ratch, two hind feet white, foaled June 10th, 1899. Bred and exhibited by Alfred Mason, L'Amaroux, Ont.; sire, Prince of Quality (imp.) [2173] 5648; dam, Grace Watts [7820], by Lord Fitz Erskine (imp.) [710] (5984).

Canadian Bred Clydesdale or Shire Mares, foaled on or subsequent to Jan. 1st, 1903.

1st.—Jessie Macarlie [5510], bay, face and hind feet white, foaled May, 1903. Bred by Jos. Lumley, Minesing, Ont. Exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Macarlie [2464]; dam, Rose of Edenvale [426], by Auld Style (imp.) [603] (3335).

2nd.—Flora Annis [7916], bright bay, stripe on face, white stripe on near fore leg to knee and on hind legs to hock, foaled May 23, 1903. Bred by Edwin Anniss, Solina, Ont. Exhibited by Smith & Richardson, Columbus, Ont.; sire, The Archer (imp.) [1259] (4051); dam, Nellie, by Sir Walter [1131] (8272).

3rd.—Belvoir Duchess [6866], bay, snip, near hind leg white half way up to shank, foaled June 14, 1904. Bred and exhibited by Rich. Gibson, Delaware, Ont.; sire, Sir Aubrey (imp.) [5147] (11190); dam, The Duchess [6402] (9160).

4th.—Maggie Priam [7559], brown, stripe, hind ankles white, foaled May 2, 1904. Bred by Hugh Greenlees, Bowmanville, Ont. Exhibited by Smith & Richardson, Columbus, Ont.; sire, Prince Priam (imp.) [3616] (10854); dam, Rose McHatton [5141], by McHatton [2436].

5th.—Meg of Burndennette [7269], bay, star, little white on near fore foot, hind feet white, foaled July 20, 1904. Bred and exhibited by A. G. Gormley, Unionville, Ont.; sire, Hopewell (imp.) [3377] (11375); dam, Rosebud [5612] 8224, by Lord Lieutenant (imp.) [975] 5175 (4529).

Shire Stallions, foaled previous to Jan. 1, 1903.

1st.—Bramhope Blackthorn (imp.) [458] (19394), black, white blaze, white hind legs, foaled 1899. Bred by late Jno. Dale, Arthington, Leeds, England. Imported by Jno. A. Turner, Calgary, Alta. Exhibited by O. Sorby, Guelph, Ont.; sire, Bramhope Duke (16019); dam, Creskeld Blossom (28158), by Pure Gold (8066).

2nd.—Coleshill Royal Albert (imp.) [383] (20367), black, white face, four white legs, foaled in 1901. Bred by the late Walter Done, Cawarden Springs, Rugeley, England. Imported by S. G. Mackaness, Abingdon Lodge, Northampton, England. Exhibited by John Gardhouse & Sons, Highfield, Ont.; sire, Moorland Paxton (16259); dam, Stenson Duchess (7114), by Royal Albert (1885).

3rd.—Medbourne Heirloom (imp.) [462] (21653), grey, white face, white near hind leg, foaled 1902. Bred by Christopher Gibson, The Old Hall, Mayfield, Ashbourne, England. Imported and exhibited by Rowland Keevil, Crampton, Ont.; sire, Calwich Heirloom (14547); dam, Lady Blanche (18431), by Chancellor (4959).

4th.—Albert's Model (imp.) [461] (22063), brown, stripe down face, white off fore foot, hind legs white to hocks, foaled 1902. Bred by Jno. T. Wrathall, Lawrence House, Milnthorpe, Westmoreland, England. Imported and exhibited by J. B. Hogate, Weston, Ont.; sire, Fear None (4394); dam, Bonny (9466), by Sir Oliver (8214).

Shire Stallions, foaled in 1903.

1st.—Nateby King (imp.) [420], bay, foaled 1903. Bred by Evan Willacy, Nateby, Garstang, England. Exhibited by J. M. Gardhouse, Weston, Ont.; sire, Gunthorpe Advance [13136]; dam, Janet (32615), by Ercall Wynn (14620).

2nd.—Falstaff 3rd (imp.) [460] (22978), brown, star, white hind socks, foaled 1903. Bred by Jno. Hutchener, Catterall Hall, Garstang, England. Imported and exhibited by J. B. Hogate, Weston, Ont.; sire, Lymm Harold (19806); dam, Catterall Darling (38426), by Oliver 2nd (18267).

Shire Mares, foaled previous to Jan. 1st, 1903.

1st.—Black Jewel (imp.) [234] (Vol. 28, E.), black, stripe in face, three white legs, foaled 1902. Bred by Wm. Hall, Westfield, Claughton, Garstang, England. Exhibited by J. M. Gardhouse, Weston, Ont.; sire, Tartar 2nd (15385); dam, Daisy, by Cardinal (2407).

2nd.—Laura [112], bay, stripe on face, near front and both hind legs with white stockings, foaled May 1, 1896. Bred by Morris, Stone & Wellington, Fonthill, Ont. Exhibited by Jno. Gardhouse & Sons, Highfield, Ont.; sire, Pride of Hatfield (imp.) [256] (13103); dam, Daisy [82], by Chieftain 2nd (imp.) [194] (5723).

Shire Mares, foaled on or subsequent to Jan. 1st, 1903.

1st.—Underley Torfrida 3rd (imp.) [234] (Vol. 27, E.), dark brown, white stroke down face, white hind fetlocks, foaled 1904. Bred by Lord Henry Bentinck, Underley Hall, Kirby Lonsdale, England. Imported and exhibited by J. B. Hogate, Weston, Ont.; sire, Patrick 2nd (19929); dam, Torfrida (37516), by Saxon Lad (14854).

2nd.—Parkside Heroine (imp.) [229] (Vol. 28, E.), red roan, ratch, white hind legs, foaled 1903. Bred by Sam. Salthouse, Roseacre, Kirkham, England. Imported by J. B. Hogate, Weston, Ont. Exhibited by Charles F. Maw, Omagh, Ont.; sire, Horbling Harold (15647); dam, Pink (39874), by Fylde Champion (5868).

3rd.—Violet (imp.) (Vol. 28, E.), bay, white star, two hind and one fore foot white, bred by J. E. Taylor, Carnforth, England. Imported and exhibited by J. B. Hogate, Weston, Ont.; sire, Lord Cecil (17482); dam, Scarlet Flower (37156).

Stallion Colts, either imported Clydesdales, Canadian Bred Clydesdales, imported Shires or Canadian Bred Shires, foaled subsequent to or on Jan. 1st, 1905.

1st.—Royal Chattan [4518], bay, face and legs white, foaled May 2, 1905. Bred and exhibited by Jno. W. Cowie, Markham, Ont.; sire, Gallant Chattan (imp.) [4223] (12153); dam, Nellie Rosewood [3486], by Lord Wellington (imp.) [2962] 9977 (6981).

2nd.—What Care I [4528], bay, stripe, hind legs white, foaled April 22, 1905. Bred and exhibited by Jas. Richardson, St. Paul's, Ont.; sire, The Leading Article (imp.) [3967] (10139); dam, Lady Union Bank [6027], by Union Bank (imp.) [4209] (10016).

Clydesdale Stallion, any age, imported or Canadian Bred.

1st.—Mascot (imp.) [4554] (12243). Exhibited by Smith & Richardson, Columbus.

Clydesdale Mare, any age, imported or Canadian Bred.

1st.—Baroness [7917]. Exhibited by Smith & Richardson, Columbus.

Shire Stallion, any age.

1st.—Bramhope Blackthorn (imp.) [458] (19394). Exhibited by O. Sorby, Guelph

Shire Mare, any age.

1st.—Black Jewel (imp.) [234] (Vol. 28, E.). Exhibited by J. M. Gardhouse, Weston.

Heavy Draught Geldings, 3 years old and over, sired by a registered Clydesdale or Shire Stallion.

1st.—Bobbie Burns, chestnut, foaled in 1901. Exhibited by Alex. Doherty, Ellesmere, Ont.; sire, Macarlie [2464] 8782.

2nd.—Charlie, bay, two white hind legs and white face, foaled May 20, 1901. Exhibited by Dominion Transport Co., Toronto; sire, Royal Huntly (imp.) [2432] (10632).

3rd.—Prince Arthur, bay, white face and four white feet, foaled April 25, 1901. Exhibited by Dominion Transport Co., Toronto; sire, Montrave Chief (imp.) [537] (5222).

4th.—Grey Prince, grey, four white legs and face, foaled in 1902. Exhibited by Jno. W. Cowie, Markham, Ont.; sire, Lord Tinto (imp.) [3633] 10716 (11104).

Heavy Draught Team in harness, geldings or mares, to be sired by either registered Clydesdale or Shire Stallions. Animals competing in other sections not eligible.

1st.—Lily Charming [3056], bay, foaled April 16, 1901. Bred by exhibitor; sire, Lord Charming [2264] 7564; dam, Miss Stanley [2307] 5877, by Stanley Prince (imp.) [2265] 3971 (6315).

Miss Charming [2605], bay, stripe in face, near fore leg white to knee, hind legs white, foaled April 25, 1899. Bred by D. & O. Sorby, Guelph, Ont.; sire, Lord Charming [2264]; dam, Miss Stanley [2307] 5877, by Stanley Prince (imp.) [2265] 3971 (6315). Exhibited by O. Sorby, Guelph, Ont.

2nd.—Bush Maggie (imp.) [7751] (Vol. 26, S.), black, white hairs over body, white lip, three white legs, foaled May, 1902. Bred by David Jamieson, Roundbush, Annan, Scotland. Imported by Jno. A. Boag & Son, Ravenshoe, Ont.; sire, Prince Tom [4145] (11149); dam, Fair Helen [6241] (15583), by Lord Lothian [3513] (5998).

Lady Brown (imp.) [5886] (Vol. 27, S.), dark brown, face and feet white, spot on belly, foaled 1904. Bred by Jno. Brown, Howes, Annan, Scotland; sire, Lord Lothian [3513] (5998); dam, Crown Pearl of Arnprior [5885] (13405), by Crown and Feather [4643] (8559). Exhibited by Jno. A. Boag & Son, Ravenshoe, Ont.

Twelfth Canadian Horse Show.

THOROUGHBREDS.

Stallions foaled previous to Jan. 1st, 1903.

- 1st.—Orme Shore (imp.), chestnut, foaled in 1901. Exhibited by Robt. Davies, Toronto; sire, Orme; dam, Virginia Shore.
2nd.—Kapanga Horse, chestnut, 15.2½, aged. Exhibited by Dr. Andrew Smith, Toronto; sire, Spendthrift (imp.); dam, Kapanga.
3rd.—Balsover, brown, 15.3½, foaled in 1901. Exhibited by Robt. Davies, Toronto; sire, Orme; dam, Clatterfeet.
4th.—Procession, bay, 16.1, foaled 1896. Exhibited by Wm. McKay, Doncaster; sire, Order; dam, Triumph.

Stallions foaled subsequent to or on Jan. 1st, 1903.

- 1st.—Rigolo 40706, brown, 16, foaled in 1904. Exhibited by A. W. Mackenzie, Toronto; sire, Dalmoor; dam, Noisy.
2nd.—King Hayoc 38503, chestnut, 15.1, foaled in 1903. Exhibited by Geo. C. Scriven, Toronto; sire, Havoc; dam, Palmetta.

Stallions, qualified to improve the breed of Saddle Horses and Hunters.

- 1st.—Ailes D'Or (imp.) 527, chestnut, 16.1, foaled in 1900. Exhibited by Robt. Davies, Toronto; sire, Melton; dam, Golden Wings.
2nd.—Ben Carrick, golden bay, 16, foaled in 1899. Exhibited by Allan Kemp, Oakville; sire, Ben Strome (imp.); dam, Hanoletta (imp).
3rd.—Procession, bay (See Class 1). Exhibited by Wm. McKay, Doncaster.
4th.—Dalmoor, bay, 16.1, foaled in 1894. Exhibited by E. Whyte, Hamilton; sire, Louis 13th; dam, Lady Dalmeny.

Best Thoroughbred Stallion, any age.

- 1st.—Orme Shore (imp.) (See Class 1). Exhibited by Robert Davies, Toronto.

STANDARD BREDS.

Standard Bred Roadster Trotting Stallion, foaled previous to Jan. 1st, 1903.

- 1st.—The Beau Ideal, chestnut. Exhibited by H. C. Stinson, Brantford; sire, Dare Devil; dam, Nettie King.
2nd.—Lord of the Manor, black, 15.3, aged. Exhibited by Geo. W. Kennedy, Ilderton; sire, Mambrino King 1279; dam, Princess Chimes.
3rd.—Orodell 36450, chestnut, 15.3, foaled in 1902. Exhibited by Miss K. L. Wilks, Galt; sire, Delmarch (9789); dam, Oro Fina 218.
4th.—Fritz Bingen 37553, brown, 15.2, foaled in 1901. Exhibited by Hugh Scott, Toronto; sire, Bingen 29567; dam, Javotte.

Standard Bred Roadster Trotting Stallion, foaled subsequent to or on Jan. 1st, 1903.

- 1st.—Mograzia, bay, 15.3, foaled in 1903. Exhibited by Miss K. L. Wilks, Galt; sire, Moko 24457; dam, Congrazia (2.19½).
2nd.—Steel Brand 41570, bay, 15.2½, foaled in 1903. Exhibited by Jno. Gentles, Brantford; sire, Steel Arch 35639; dam, Dara.
3rd.—Cruickston 39217, bay, 15.3, foaled in 1903. Exhibited by Miss K. L. Wilks, Galt; sire, Moko 24457; dam, Moonstone.
4th.—Gilbert Parker 38256, bay, 15, foaled in 1903. Exhibited by Ashley Stock Farm, Belleville; sire, DeVeras; dam, Lottie Frasier.

Standard Bred Pacing Stallion, any age.

- 1st.—Arbuteskan, bay, 15.3, aged. Exhibited by H. H. James, Hamilton; sire, Arbutus (9722); dam, Modjeska.
2nd.—Steel Trust 37516, bay, 16, foaled in 1902. Exhibited by Hunt & Colter, Brantford; sire, Steel Arch 35639; dam, Dara.

3rd.—Stroud Boy, bay, 15.1, foaled in 1900. Exhibited by C. H. Anderson, Toronto; sire, Harry Wilkes; dam, Maud M.

4th.—Joe Gothard, bay. Exhibited by J. Swarts, St. Catharines; sire, St. Gothard.

HACKNEYS.

Stallions foaled previous to Jan. 1st, 1903.

1st.—Rosary (imp.)—310—(8617), chestnut, foaled in 1901; bred by T. D. Reed, Driffield, Eng. Exhibited by H. J. Spenceley, Box Grove; sire, Rosador (4964); dam, (6454) Calamine.

2nd.—Hunmanby Duke (imp.)—275—, bay, 16, foaled in 1899; bred by T. Spink, Hunmanby, Eng. Exhibited by R. Beith, Bowmanville, Ont.; sire, Garton Duke of Connaught (3009); dam, [(7981) Jessie 2nd].

3rd.—Warwick Model (imp.)—304—(8694), bay, foaled in 1902; bred by John Conchar, Wyde Green, Birmingham, Eng. Exhibited by O. Sorby, Guelph; sire, Garton Duke of Connaught (3009); dam, (10804) Cynthia.

4th.—Samuel Stiles (imp.)—303—(9005), chestnut, small star, white fore fetlocks, foaled 1902; bred by Jno. Beal, Blanch, North Dalton, Hull, Eng. Exhibited by J. B. Hogate, Weston, Ont.; sire, Blanch Squire (7711); dam, (15634) Blanch Primrose.

Stallions foaled subsequent to or on Jan. 1st, 1903.

1st.—Cedar Go Bang (imp.)—273—(vol. 23 E.), chestnut, foaled in 1903; bred by G. Wilson, Garton, Driffield, Eng. Exhibited by R. Beith, Bowmanville, Ont.; sire, Garton Duke of Connaught (3009); dam, (14216) Cedar Primrose.

2nd.—Nether Hall (imp.)—300—, chestnut, foaled in 1903; bred by Mrs. Mackie, Auchencairn, Scot. Exhibited by R. Beith, Bowmanville, Ont.; sire, Norbury Lightning (7563); dam, —327—(16352) Wilton's Pride (imp.).

Sweepstakes, best Hackney Stallion, any age, given by the Canadian Hackney Horse Society

1st.—Rosary (imp.)—310— (See Class 8). Exhibited by H. J. Spenceley, Box Grove.

Best Hackney Mare, any age, shown on line.

1st.—16—575 (4371) Miss Baker (imp.), brown, white feet, foaled in 1889; bred by Jas. Case, Cockthorpe, Wells, Eng. Exhibited by O. Sorby, Guelph; sire, Ruby (1342); dam (1441) Betsy Baker.

2nd.—328—Balcary (imp.), brown, foaled 1903; bred by Mrs. Mackie, Auchencairn, Scot. Exhibited by R. Beith, Bowmanville, Ont.; sire, Norbury Lightning (7563); dam, (16351) Wilton's Best.

3rd.—307—Londesborough Lady (imp.), chestnut, foaled in 1904; bred by J. & J. Wreghitt, East Thorpe, Market Weighton, Eng. Exhibited by R. Beith, Bowmanville, Ont.; sire, Polonius (4931); dam, (12895) Londresborough Waitress.

Best Hackney Mare or Filly, by an imported sire and out of an imported dam, both registered in the English Hackney Stud Book. Silver Medal, given by Hackney Horse Society of Great Britain.

1st.—133— Queen of the Party, chestnut roan, stripe in face, inside of coronet on nigh fore leg white, off fore foot and hind legs white below joints; foaled April 12, 1900. Bred and exhibited by H. N. Crossley, Rosseau, Ont.; sire, Rosseau Performer (imp.)—34—(5391); dam—11—(5530) Lady Cocking (imp.).

Best Hackney Stallion, any age. Gold Medal, presented by the Canadian National Exhibition.

1st.—Rosary (imp.)—310— (See Class 8). Exhibited by H. J. Spenceley, Box Grove.

High Stepping Registered Stallion, any breed, in harness, to a suitable vehicle. Conformation, style of going and high action to be considered.

1st.—Honor Bright, brown, 15.2 (standard bred). Exhibited by Crow & Murray, Toronto.

2nd.—Royal Salute, brown, 15.3 (standard bred). Exhibited by Crow & Murray, Toronto.

Stallion, any age or breed, qualified to produce Carriage Horses.

- 1st.—Warwick Model (imp.)—304— (Hackney). Exhibited by O. Sorby, Guelph.
- 2nd.—The Black Doctor (imp.)—151— (Hackney). Exhibited by W. R. Lowes & Co., Brampton.
- 3rd.—Samuel Smiles (imp.)—303— (Hackney). Exhibited by J. B. Hogate, Weston.
- 4th.—Lord of the Manor (standard bred). Exhibited by Geo. W. Kennedy, Ilderton.

Pair of Heavy Draught Mares or Geldings, any breed, shown in Harness.

- 1st.—Charlie, b.g., 16.3, 5 yrs; Bobby Burns, b.g., 16.2, 6 yrs. Exhibitors, Dominion Transport Co., Toronto.
- 2nd.—Miss Charming [2605], bay, 7 yrs; Lady Calista (imp.) [5121] (14167), bay, 10 yrs. Exhibitor, O. Sorby, Guelph.
- 3rd.—Prince Arthur, b.g., 16.2, 5 yrs.; Sport, b.g., 16.3, 6 yrs. Exhibitors, Dominion Transport Co., Toronto.
- 4th.—Roger, b.g., 16.1, 6 yrs; Barney, b.g., 16.1, 7 yrs. Exhibitors, Cosgrave Brewing and Malting Co., Toronto.

Single Heavy Draught Mare or Gelding, any breed, shown in a cart or waggon.

- 1st.—Bobby Burns, b.g., 16.2, 6 yrs. Exhibitors, Dominion Transport Co., Toronto.
- 2nd.—Sport, b.g., 16.3, 6 yrs. Exhibitors, Dominion Transport Co., Toronto.
- 3rd.—Miss Charming [2605], bay, 7 yrs. Exhibitor, O. Sorby, Guelph.
- 4th.—Charlie, b.g., 16.3, 5 yrs. Exhibitors, Dominion Transport Co., Toronto.

Pair of Heavy Draught Mares or Geldings, sired by a registered Clydesdale stallion.

- 1st.—Charlie, b.g., 16.3, 5 yrs.; sire, Royal Huntley (imp.) [2432]; Bobby Burns, b.g., 16.2, 6 yrs.; sire, Macarlie [2464]. Exhibitors, Dominion Transport Co., Toronto.
- 2nd.—Miss Charming [2605], bay, foaled 1899; sire, Lord Charming [2264]; dam, Miss Stanley [2307]; Lady Calista (imp.) [5121] (14167), bay, foaled 1896; sire, Exquisite [4122] (8621); dam, Edith Plantagenet [5122] (6040). Exhibitor, O. Sorby, Guelph.
- 3rd.—Prince Arthur, b.g., 16.2, 5 yrs.; sire, Montrave Chief (imp.) [537]; Sport, b.g., 16.3, 6 yrs.; sire, Lord Charming [2264]. Exhibitors, Dominion Transport Co., Toronto.
- 4th.—Lady Sally (imp.) [4774] (Vol. 24 S.), dark brown, foaled 1901; sire, The Dean [4033] (10937); dam, Lady Grace [3198] (14114); Miss Wilson (imp.) [4775] (Vol. 26 S.), brown, foaled 1903; sire, King of Kyle [3662] (10213); dam, Jenny of Muirsdale [4955] (Vol. 26 S.). Exhibitors, Smith & Richardson, Columbus.

Heavy Draught Team of Four Horses, to be shown in harness before a suitable waggon.

- 1st.—Bobby Burns, b.g., 16.2, 6 yrs; Charlie, b.g., 16.3, 5 yrs; Prince Arthur, b.g., 16.2, 5 yrs; Sport, b.g., 16.3, 6 yrs. Exhibitors, Dominion Transport Co., Toronto.

HORSES IN HARNESS.*Mare or Gelding, over 14.1 hands and not exceeding 15 hands. To be shown to a gig, cart or phaeton.*

- 1st.—Sparkle, b.m., 14.3, 8 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Cabin Boy, br.g., 15, 6 yrs. Exhibitor, S. H. McCoy, M.D., St. Catharines.
- 3rd.—Highball, br.g., 15, 5 yrs. Exhibitor, Crow & Murray, Toronto.

Mare or Gelding, over 15 hands and not exceeding 15.2 hands. To be shown to a gig, cart or phaeton.

- 1st.—Lord Norfolk, b.g., 15.1½, 4 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Lady Norfolk, b.m., 15.2, 6 yrs. Exhibitor, Mrs. A. Beck, London.
- 3rd.—Duchess of Dantzic, br. m., 15.2, 7 yrs. Exhibited by F. Orr Lewis, Montreal.

Mare or Gelding, over 15.2 hands and not exceeding 16 hands. To be shown to a gig, cart or phaeton.

- 1st.—Lady Elgin, b.m., 15.2½, 7 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—President, br.g., 15.2½, 5 yrs. Exhibitors, Crow & Murray, Toronto.
- 3rd.—Sovereign Hero, b.g., 15.3, 5 yrs. Exhibitors, Graham, Renfrew Co., Bedford Park.

Mare or Gelding, over 16 hands. To be shown to a gig, cart or phaeton.

- 1st.—Sensation, blk.g., 16.1, 6 yrs. Exhibitor, P. Maher (agent), Toronto.
- 2nd.—Montrose, ch.g., 16.0½. Exhibitor, J. J. Dixon, Toronto.
- 3rd.—Amazement, b.m., 16.0½. Exhibitor, C. D. Woolley, Port Ryerse.

Pair of Mares or Geldings, not exceeding 15.2 hands. To be shown to a four-wheeled vehicle.

- 1st.—Lady Norfolk, b.m., 15.2, 6 yrs.; Lord Norfolk, b.g., 15.1½, 4 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Sparkle, b.m., 14.3, 8 yrs.; Splendor, b.g., 14.3, 6 yrs. Exhibitor, Mrs. A. Beck, London.
- 3rd.—Cabin Boy, b.g. 15, 6 yrs.; Queen B., br.m., 15, 6 yrs. Exhibitor, S. H. McCoy, M.D., St Catharines.

Pair of Horses, Mares or Geldings, over 15.2 hands and not exceeding 16 hands. To be shown to a four-wheeled vehicle.

- 1st.—Lady Elgin, b.m., 15.2½, 7 yrs.; Lord Aylmer, b.g., 15.2½, 5 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Napoleon, br.g., 15.2½, 7 yrs.; Duchess of Dantzic, br.m., 15.2, 7 yrs. Exhibitor, F. Orr Lewis, Montreal.
- 3rd.—Flyer, br.g., 15.3½, 7 yrs.; Mikado, br.g., 15.3½, 7 yrs. Exhibitor, S. H. McCoy, M.D., St. Catharines.

Pair of Horses, Mares or Geldings, over 16 hands. To be shown to a four-wheeled vehicle.

- 1st.—Fascination, blk.m., 16.1, 6 yrs.; Sensation, blk.g., 16.1, 6 yrs. Exhibitor, P. Maher (agent), Toronto.
- 2nd.—Astonishment, b.m., 15.3½, 5 yrs.; Amazement, b.m., 16.0½. Exhibitor, C. D. Woolley, Port Ryerse.
- 3rd.—Grey Thorn, b.g., 16.0½; Ranger Girl, b.m., 16 Exhibitor, A Yeager, Simcoe.

For Amateurs Only.—Single Horses, Geldings or Mares, not under 15 hands 2 inches. To be shown to a gig or dog cart and driven by the exhibitor. Horse to count 60 per cent.; vehicle and harness 40 per cent. The entire exhibit to have been the bona fide property of exhibitor at time of entry. In event of an exhibitor making more than one entry, others of his entry must be driven by an amateur, approved of by the Committee.

- 1st.—Lady Norfolk, b.m., 15.2, 6 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Montrose, ch.g., 16.0½. Exhibitor, J. J. Dixon, Toronto.

For Amateurs Only.—Pair of Horses, Geldings or Mares, not under 15 hands. To be shown to T. cart, mail stanhope, spider phaeton, or other vehicle suitable for a gentleman's private use, and to be driven by the exhibitor. Horses to count 60 per cent., and to be practically sound, with good manners; carriages, 20 per cent.; harness, 10 per cent.; servants' liveries, etc., 10 per cent. The entire exhibit to have been the bona fide property of exhibitor at time of entry. In event of an exhibitor making more than one entry, others of his entries must be driven by an amateur, approved of by the Committee.

- 1st.—Princess Dagmar, br.m., 15.2½, 4 yrs.; The Duchess of Marlborough, br.m., 15.2, 4 yrs. Exhibitor, W. A. Young, M.D., Toronto.
- 2nd.—Flyer, br.g., 15.3½, 7 yrs.; Mikado, br.g., 15.3½, 7 yrs. Exhibitor, S. H. McCoy, M.D., St Catharines.

For Amateurs Only.—Single Horses, Geldings or Mares, any height. To be shown to a victoria, cabriolet or brougham. Horses to count 60 per cent., and to be practically sound, with good manners; carriages 20 per cent.; harness, 10 per cent.; servants' liveries, etc., 10 per cent. The entire exhibit to have been the bona fide property of the exhibitor at time of entry, and to have been in use by the exhibitor and his family for the purpose intended.

1st.—Montrose, ch.g., 16.0 $\frac{1}{4}$. Exhibitor, J. J. Dixon, Toronto.

2nd.—Duches of Dantzic, br.m., 15.2, 7 yrs. Exhibitor, F. Orr Lewis, Montreal.

For Amateurs Only.—Pair of Horses, Geldings or Mares, any height. To be shown to a victoria, cabriolet or brougham. Horses to count 60 per cent., and to be practically sound, and with good manners; carriage, 20 per cent.; harness, 10 per cent.; servants' liveries, etc., 10 per cent. The entire exhibit to have been the bona fide property of the exhibitor at time of entry, and to have been in use by the exhibitor and his family for the purposes intended.

1st.—Peter Pan, b.g., 15.1, 7 yrs.; Polly Prim, b.m., 15, 7 yrs. Exhibitor, Mrs. J. J. Dixon, Toronto.

2nd.—Napoleon, br.g., 15.2 $\frac{1}{4}$, 7 yrs.; Duchess of Dantzic, br.m., 15.2, 7 yrs. Exhibitor, F. Orr Lewis, Montreal.

For Dealers Only.—Pair of Horses, Geldings or Mares, not under 15 hands. To be shown to a T. cart, mail stanhope, spider phaeton, or other suitable vehicle. Horses to count 75 per cent.; appointments, 25 per cent. Horses to have good conformation, quality and manners. To be the property of the exhibitor, who must have been the owner at the time of making the entries.

1st.—Creighton, b.g., 15.2, 7 yrs.; Crighton, b.g., 15.2 $\frac{1}{4}$, 7 yrs. Exhibitor, Geo. Pepper, Toronto.

2nd.—Derby Queen, b.m., 15.2; Chorus Girl, b.m., 15.2. Exhibitor, A. Yeager, Simcoe.

Mare or Gelding, not exceeding 15 hands 2 inches, bred in Canada, that has not won a first prize, singly or in combination, at any recognized Horse Show or Exhibition prior to being shown in this class. To be shown to gig, cart or phaeton.

1st.—High Ball, br.g., 15, 5 yrs. Exhibitors, Crow & Murray, Toronto.

2nd.—Lord Norfolk, b.g., 15.1 $\frac{1}{4}$, 4 yrs. Exhibitor, Mrs. A. Beck, London.

3rd.—Newsboy, b.g., 15, 4 yrs. Exhibitor, C. D. Woolley, Port Ryerse.

Mare or Gelding, over 15 hands 2 inches, bred in Canada, that has not won a first prize, singly or in combination, at any recognized Horse Show or Exhibition prior to being shown in this class. To be shown to gig, cart or phaeton.

1st.—Blucher, ch.g., 16, 5 yrs. Exhibitor, J. G. Worts, Toronto.

2nd.—Sovereign Hero, b.g., 15.3, 5 yrs. Exhibitors, Graham, Renfrew Co., Toronto.

3rd.—Amazement, b.m., 16.0 $\frac{1}{4}$. Exhibitor, C. D. Woolley, Port Ryerse.

Horse and Runabout. For amateurs only. Mare or Gelding, to be shown to a runabout and driven by owner. Horse to count 60 per cent.; appointments, 40 per cent. The horse should have conformation, style, all-round action, pace and good manners. Horses must stand without being held.

1st.—Sparkle, b.m., 14.3, 8 yrs. Exhibitor, Mrs. A. Beck, London.

2nd.—Cabin Boy, br.g., 15, 6 yrs. Exhibitor, S. H. McCoy, M.D., St. Catharines.

Mare or Gelding, suitable for a lady to drive. To be shown to an appropriate vehicle and driven by a lady. Horse to count 60 per cent.; appointments, 40 per cent. Amateurs only.

1st.—Lady Norfolk, b.m., 15.2, 6 yrs. Exhibitor, Mrs. A. Beck, London.

2nd.—The Duchess of Marlborough, br.m., 15.2, 4 yrs. Exhibitor, W. A. Young, M.D., Toronto.

Champion Harness Class, open to Mares or Geldings that have taken a first prize in single harness at this or any previous recognized Horse Show.

1st.—Lady Elgin, b.m., 15.2 $\frac{1}{4}$, 7 yrs. Exhibitor, Mrs. A. Beck, London.

Champion High Stepper, Mare or Gelding. Canadian bred. Conformation and style of going as well as high action to be considered. To be shown to a jig or dog cart. Name of sire must accompany entry. First prize, \$60 and King Edward Hotel Challenge Cup. Second, \$30. Third, \$15. Fourth, Reserve. Cup to be won three times before becoming the property of the exhibitor. A security is to be given for cup, or it is to remain in the possession of the Hotel (on exhibition) until finally won. [Cup was won in 1905 by Mr. J. J. Dixon, Toronto.]

1st.—Sparkle, b.m., 14.3, 8 yrs. Exhibitor, Mrs. A. Beck, London.

2nd.—Sovereign Hero, b.g., 15.3, 5 yrs. Exhibitors, Graham, Renfrew Co., Bedford Park.

3rd.—Lady Norfolk, b.m., 15.2, 4 yrs. Exhibitor, Mrs. A. Beck, London.

Harness Tandems, mares or geldings.

1st.—Exhibitor, Mrs. A. Beck, London.

2nd.—Exhibitor, Geo. Pepper, Toronto.

3rd.—Exhibitors, Crow & Murray, Toronto.

Harness Tandems, mares or geldings, to be owned and driven by an amateur.

1st.—Exhibitor, Mrs. A. Beck, London.

2nd.—Exhibitor, Mrs. A. Beck, London.

FOURS IN HAND.

Teams not under 15 hands, may be shown before a coach, drag, or brake.

1st.—Exhibitor, Mrs. A. Beck, London.

2nd.—Exhibitors, S. H. McCoy and Geo. Pepper, Toronto.

3rd.—Exhibitors, Crow & Murray, Toronto.

SADDLE HORSES.

Best Saddle and Harness Horse, Mare or Gelding, 15 hands and over, to be first shown in an appropriate vehicle and judged as a horse best suited for harness purposes, the horse to be unharnessed and to be shown and judged under saddle. The horse best suited for both these purposes to be awarded first prize.

1st.—Lady Sapphire, br.m., 15.2. Exhibitor, A. Yeager, Simcoe.

2nd.—Cingalee, ch.m., 15.3½, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.

3rd.—Othello, ch.g., 15.2½, 7 yrs. Exhibitor, Mrs. J. J. Dixon, Toronto.

Mare or Gelding, over 14.2 hands, and not exceeding 15.2 hands.

1st.—Lady Sapphire, br.m., 15.2. Exhibitor, A. Yeager, Simcoe.

2nd.—Harkwyn, br.g., 15.1½, 5 yrs. Exhibitor, Jos. Kilgour, Toronto.

3rd.—Glendale, ch.g. Exhibitor, Geo. Pepper, Toronto.

Mare or Gelding, over 15.2 hands up to carrying from 160 to 190 pounds.

1st.—Cingalee, ch.m., 15.3½, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.

2nd.—Othello, ch.g., 15.2½, 7 yrs. Exhibitor, Mrs. J. J. Dixon, Toronto.

3rd.—Sir Robert, ch.g., 15.3. 6 yrs. Exhibitor, Gordon J. Henderson, Hamilton.

Mare or Gelding, over 15.2 hands up to carrying 190 pounds and over.

1st.—Mountcashel, blk.g., 16.1, 4 yrs. Exhibitor, L. Meredith, London.

2nd.—Tiny, b.g., 16.1, 4 yrs. Exhibitor, Alf. Rogers, Toronto.

3rd.—Masterpiece, ch.g., 16.1, 5 yrs. Exhibitor, Geo. Pepper, Toronto.

Lady's Saddle Horse, not under 14.3 hands, to be ridden by a lady.

1st.—Lady Sapphire, br.m., 15.2. Exhibitor, A. Yeager, Simcoe.

2nd.—Othello, ch.g., 15.2½, 7 yrs. Exhibitor, Mrs. J. J. Dixon, Toronto.

3rd.—Cingalee, ch.m., 15.3½, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.

*Amateurs Only. Mare or Gelding, not under 15 hands, up to carrying 160 pounds.
To be ridden by an amateur.*

- 1st.—Cingalee, ch.m., 15.3½, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 2nd.—Othello, ch.g., 15.2½, 7 yrs. Exhibitor, Mrs. J. J. Dixon, Toronto.
- 3rd.—Sir Robert, ch.g., 15.3, 6 yrs. Exhibitor, Gordon J. Henderson, Hamilton.

Champion Saddle Class, Best Saddle Horse.

- 1st.—Lady Sapphire, br.m., 15.2. Exhibitor, A. Yeager, Simcoe.

HUNTERS AND JUMPERS.

Qualified Hunters (Heavyweight), up to carrying 190 pounds and over. Conformation and quality to count 60 per cent.; performances over fences to count 40 per cent. To carry at least 180 pounds.

- 1st.—Sweet Briar, b.m., 16, 6 yrs. Exhibitor, Capt. W. H. Evans, Montreal.
- 2nd.—The Duke, br.g., 16.2, 7 yrs. Exhibitor, G. W. Beardmore, Toronto.
- 3rd.—Grey Friar, gr.g., 16, 7 yrs. Exhibitor, Hume Blake, Toronto.

Qualified Hunters (Middleweight), up to carrying from 165 pounds to 190 pounds to hounds. Conformation and quality to count 60 per cent.; performances over fences 40 per cent. To carry at least 165 pounds.

- 1st.—Lord Minto, b.g., 16. Exhibitor, Geo. Pepper, Toronto.
- 2nd.—Cloth of Gold, ch.g., 16, 6 yrs. Exhibitor, Alf. Rogers, Toronto.
- 3rd.—Twilight, br.g., 16.2, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.

Green Hunters (Heavyweight), up to carrying 190 pounds and over to hounds. Conformation and quality to count 60 per cent.; performances over fences 40 per cent. A horse entered in this class is ineligible for middle or lightweight classes. To carry at least 180 pounds.

- 1st.—Kakabeka, ch.g., 16, 4 yrs. Exhibitor, Mrs. A. Beck, London.
- 2nd.—Stolen Honey, ch.g., 16, 4 yrs. Exhibitors, Crow & Murray, Toronto.
- 3rd.—Kilworth, blk.g., 16, 5 yrs. Exhibitor, L. Meredith, London.

Green Hunters (Middleweight), up to carrying from 165 to 190 pounds to hounds. Conformation and quality to count 60 per cent.; performances over fences to count 40 per cent. To carry at least 165 pounds.

- 1st.—The Jap, b.g., 16, 4 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 2nd.—Starlight, b.m., 15.3½, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 3rd.—Gate Bell, br.m., 16, 7 yrs. Exhibitor, Hugh S. Wilson, Toronto.
- 4th.—Day Break, br.m., 16, 4 yrs. Exhibitor, Jos. Kilgour, Toronto.

Lightweight Hunters, open to both green and qualified horses, up to carrying from 150 pounds to 165 pounds to hounds. Conformation and quality to count 60 per cent.; performances over fences 40 per cent. To carry at least 150 pounds.

- 1st.—Harkwyn, br.g., 15.1½, 5 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 2nd.—Heather Belle, br.m., 15.3, 4 yrs. Exhibitor, Mrs. A. Beck, Toronto.
- 3rd.—The Wasp, br.g., 15.3, 6 yrs. Exhibitors, Crow & Murray, Toronto.

Jumping, open to all. Performances over fences only to count.

- 1st.—Sporting Lady, br.m., 15.2, 6 yrs. Exhibitors, Crow & Murray, Toronto.
- 2nd.—Twilight, br.g., 16.2, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 3rd.—Jenny Lind, b.m., 15.2, 6 yrs. Exhibitors, Crow & Murray, Toronto.

Best Performance over Six Jumps, 2 at 4 feet, 2 at 4 feet 6 inches, 2 at 5 feet; carrying not less than 140 pounds.

- 1st.—Confidence, b.g., 16, 5 yrs. Exhibitors, Crow & Murray, Toronto.
- 2nd.—Lord Minto, b.g., 16. Exhibitor, Geo. Pepper, Toronto.
- 3rd.—The Wasp, br.g., 15.3, 6 yrs. Exhibitors, Crow & Murray, Toronto.

Amateurs Only—For Heavyweight Hunters, up to carrying 190 pounds to hounds. Owned and ridden by amateurs and the bona fide property of exhibitor at time of entry. Conformation and quality to count 50 per cent.; performances over fences to count 50 per cent.

- 1st.—Sweet Briar, b.m., 16, 6 yrs. Exhibitor, Capt. W. H. Evans, Montreal.
- 2nd.—Kakabeka, ch.g., 16, 4 yrs. Exhibitor, Mrs. A. Beck, London.
- 3rd.—Mandalay, ch.m., 16, 4 yrs. Exhibitor, Allan Case, Toronto.

Amateurs only—For Middleweight Hunters, up to carrying 165 to 190 pounds to hounds. To be owned and ridden by amateurs, and be the bona fide property of Exhibitor at time of entry. Conformation and quality to count 50 per cent.; performances over fences to count 50 per cent.

- 1st.—Starlight, b.m., 15.3 $\frac{1}{2}$, 6 yrs.—Exhibitor, Jos. Kilgour, Toronto.
- 2nd.—Twilight, br.g., 16.2, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 3rd.—Cloth of Gold, ch.g., 16, 6 yrs. Exhibitor, Alf. Rogers, Toronto.

Amateurs only—For Lightweight Hunters, up to carrying from 150 to 165 pounds to hounds. To be owned and ridden by amateurs, and to be the bona fide property of Exhibitor at time of entry. Conformation and quality to count 50 per cent.; performances over fences to count 50 per cent.

- 1st.—Harkwyn, br.g., 15.1 $\frac{1}{2}$, 5 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 2nd.—Heather Belle, br.m., 15.3, 4 yrs. Exhibitor, Mrs. A. Beck, London.
- 3rd.—Mark Antony, b.g., 15.2, 7 yrs. Exhibitor, Stewart McPhie, Hamilton.

Toronto Hunt Plate. For qualified Hunters owned and ridden in pink by members enjoying full privileges of a recognized Hunt. Dealers excluded. Conformation and quality to count 25 per cent.; performances over fences 75 per cent.

- 3rd.—Cloth of Gold, ch.g., 16, 6 yrs. Exhibitor, Alf. Rogers, Toronto.
- 2nd.—Twilight, br.g., 16.2, 6 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 3rd.—Grey Friar, gr.g., 16, 7 yrs. Exhibitor, Hume Blake, Toronto.

Ladies' Hunters, up to carrying 150 pounds to hounds. Conformation and quality to count 25 per cent.; performance, 75 per cent. To be owned by a member of a recognized Hunt, and to be ridden by a lady.

- 1st.—Cloth of Gold, ch.g., 16, 6 yrs. Exhibitor, Alf. Rogers, Toronto.
- 2nd.—Harkwyn, br.g., 15.1 $\frac{1}{2}$, 5 yrs. Exhibitor, Jos. Kilgour, Toronto.
- 3rd.—Land's End, br.g., 15.3, 4 yrs. Exhibitor, Gordon J. Henderson, Hamilton.

High Jump, open to all. Trial will commence at 5 feet and jump will be raised 6 inches at a time up to and including 6 feet, after which it will be raised 4 inches at a time. Only 3 trials will be allowed to a horse at each height. A refusal within the rings shall count the same as if the horse had knocked off the top bar. The top bar will be secured by twine.

- 1st.—Myopia, br.g. Exhibitor, Miss Pepper, Toronto.
- 2nd.—Pearl, b.m. Exhibitor, E. H. Weatherbee, New York.
- 3rd.—Lord Minto, b.g., 16. Exhibitor, Geo. Pepper, Toronto.

Open Class. For horses that have won a first or second prize in any hunting or jumping class at a recognized Horse Show previous to Jan. 1st, 1906. Over eight jumps, 4 feet 6 inches high. Conformation and quality to count 50 per cent.; performance 50 per cent.

- 1st.—Sweet Briar, b.m., 16, 6 yrs. Exhibitor, Capt. W. H. Evans, Montreal.
- 2nd.—Lord Minto, b.g., 16. Exhibitor, Geo. Pepper, Toronto.
- 3rd.—Pearl, b.m. Exhibitor, E. H. Weatherbee, New York.

Toronto Corinthian Class. For horses that have been hunted at least three times by owner, who is a member of the Toronto Hunt. To be ridden by owner in pink.

- 1st.—Sir Robert, ch.g., 15.3, 6 yrs. Exhibitor, Gordon J. Henderson, Hamilton.

Champion Hunter Class.

- 1st.—Sweet Briar, b.m., 16, 6 yrs. Exhibitor, Capt. W. H. Evans, Montreal.

Sporting Tandem. Wheeler to be over 15 hands 2 inches, to be first shown as a tandem, then the leader to be saddled in the ring and ridden over the regulation jumps. Tandem to count 50 per cent. Performance over jumps 40 per cent. Appointment 10 per cent. Both horses to be owned by Exhibitor, and to be ridden and driven by the same man (an amateur).

1st.—Exhibitor, Alf. Rogers, Toronto.

Hunt Club Cup. For Three Best Horses representing a recognized Hunt or the Hamilton Riding Club. Horses must be qualified hunters or qualified under the rules of the Hamilton Riding Club and ridden by the master and two whips or by any three members in the Club uniform; appointments and uniform to count 25 per cent.

1st.—Toronto Hunt Club (Dr. W. A. Young's team).

2nd.—Toronto Hunt Club (48 Highlanders' team).

ROADSTERS.

Mare or Gelding, Trotter, not exceeding 15.2 hands.

1st.—Lady Creceus, ch.m., 15.1½, 7 yrs. Exhibitor, Miss K. L. Wilks, Galt.

2nd.—La Belle Buckner, blk.m., 15.2, 4 yrs. Exhibitor, Jas. Crow, Toronto.

3rd.—Florence, b.m., 15.1¾, 6 yrs. Exhibitor, F. R. Helliwell, Toronto.

Mare or Gelding, over 15.2 hands.

1st.—Rhea W., b.m., 15.3, aged. Exhibitor, Miss K. L. Wilks, Galt.

2nd.—Red Silk 2nd, b.m., 15.3½, 5 yrs. Exhibitor, A. Yeager, Simcoe.

3rd.—Gussie Scott, b.m., 15.3½, 5 yrs. Exhibitor, J. J. Burns, Toronto.

Pair of Mares or Geldings.

1st.—Rhea W., b.m., 15.3, aged; Easter Belle, b.m., 15.3, 8 yrs. Exhibitor, Miss K. L. Wilks, Galt.

2nd.—Electa C, br.m., 15.2, 6 yrs.; Selecta C., br.m., 15.1½, 5 yrs. Exhibitors, Hunt & Colter, Brantford.

3rd.—Riley B., 15.2½, 7 yrs.; Harley B., b.g., 15.2½, 7 yrs. Exhibitor, Hugh Scott, Toronto.

Champion Roadster, Trotter or Pacer, any age.

1st.—Rhea W., b.m., 15.3, aged. Exhibitor, Miss K. L. Wilks, Galt.

Mare or Gelding, Pacer not exceeding 15.2 hands.

1st.—Bertha W., b.m., 15.2, 6 yrs. Exhibitor, F. Maher, Toronto.

2nd.—Tilley R., ch.m., 15.1½, 5 yrs. Exhibitor, Miss K. L. Wilks, Galt.

3rd.—Jingle Bell, b.m., 15.1, aged. Exhibitor, Robt. W. Davies, Todmorden.

Mare or Gelding, Pacer over 15.2 hands.

1st.—Dossiewood, b.m., 15.2½, 3 yrs. Exhibitor, Miss K. L. Wilks, Galt.

2nd.—Little Boy, ch.g., 15.3, 7 yrs. Exhibitor, Chas. Snow, Toronto.

3rd.—Gertie C., b.m., 15.2½, 8 yrs. Exhibitor, Jno. Dowden, Toronto.

PONIES.

Pony Stallion 14.1 hands and under, to be shown on line.

1st.—Plymouth Horace (imp.)—305—bay, 13, 3 yrs. Exhibitors, Graham, Renfrew Co., Bedford Park.

2nd.—Tony Jim, spotted, 13.2, 4 yrs. Exhibitor, John Mayer, Toronto.

Single Pony in Harness, Mare or Gelding, 14 hands 1 inch and over 13 hands 1 inch.
Pony to count 60 per cent.; outfit, 40 per cent.

1st.—326—Hillhurst Bonnie, bay. Exhibitor, C. E. Gudewell, Montreal.

2nd.—Lady Grey, gr.m., 13.3, 7 yrs. Exhibitor, Miss Maher, Toronto.

3rd.—Derby's Cupid, b.g., 13.3½, 4 yrs. Exhibitor, A. Yeager, Simcoe.

*Single Pony in Harness, Mare or Gelding, 13 hands 1 inch and over 12 hands 1 inch.
Pony to count 60 per cent.; outfit, 40 per cent.*

1st.—Jean, ch.m., 13.0½, 3 yrs. Exhibitor, Geo. V. Foster, Toronto.

2nd.—Peggy, blk.m., 12.2, 8 yrs. Exhibitor, R. H. Massey, Toronto.

3rd.—Jerry, b.g., 6 yrs. Exhibitor, W. Delaney, Toronto.

*Single Pony in Harness, Mare or Gelding, 12 hands 1 inch, and over 11 hands 1 inch.
Pony to count 60 per cent.; outfit, 40 per cent.*

1st.—Tiddley Winks (imp.), iron gr.m., 12, 4 yrs. Exhibitor, Mrs. C. Wilmot, Port Hope.

2nd.—Gaiety, b.g., 11.3, 5 yrs. Exhibitor, Chas. Lovejoy, Mimico.

3rd.—Up-to-Date, b.g., 12, 4 yrs. Exhibitor, Jess. Applegath, Toronto.

Single Ponies in Harness, Mare or Gelding, 11.1 hands and under. Pony to count 60 per cent.; outfit, 40 per cent.

1st.—Ginger, ch.g., 10.3, 10 yrs. Exhibitor, Denton Massey, Toronto.

2nd.—Miss Geary, b.m., 10 yrs. Exhibitor, H. C. Bailey, Toronto.

3rd.—Flossy, b.m., 11. Exhibitor, J. Garnett, Toronto.

Pair of Ponies in Harness, Mares or Geldings, over 12 to 14.1 hands. Ponies to count 60 per cent.; outfit, 40 per cent.

1st.—Queenie, ch.m., 13.0½, 5 yrs.; Jean, ch.m., 13.0½, 3 yrs. Exhibitor, Geo. V. Foster, Toronto.

2nd.—Lord Grey, gr.g., 13.2, 5 yrs.; Jessie, ch.m., 13.3, 6 yrs. Exhibitor, J. Bruce Macdonald, Toronto.

Pair of Ponies in Harness, Mares or Geldings, 12 hands 1 inch and under. Ponies to count 60 per cent.; outfit, 40 per cent.

1st.—Dot, blk.g., 11, 6 yrs.; Dimple, blk.g., 11, 5 yrs. Exhibitor, M. E. Stewart, Orangeville.

Best Boy or Girl Rider, 14 years of age and under, on pony. This class is for amateurs only, and each contestant must be properly costumed.

1st.—Exhibitor, Jess. Applegath, Toronto.

2nd.—Exhibitor, Donald E. Hodgson, Toronto.

3rd.—Exhibitor, W. G. Mead, Norway.

Best Saddle Pony, Mare or Gelding, 14.1 hands and under, to be shown at a walk, trot and canter. Conformation to count 40 per cent.; manners, 60 per cent. To be ridden by a boy of 16 years or under.

1st.—Tiddley Winks (imp.), iron gr.m., 12, 4 yrs. Exhibitor, Mrs. C. Wilmot, Port Hope.

2nd.—Dimples, ch.m., 14, 6 yrs. Exhibitor, F. B. Matthews, Toronto.

3rd.—Punch, b.g., 14, 6 yrs. Exhibitor, H. C. Parsons, M.D., Toronto.

Best Performance over 3 jumps of Pony 14.1 hands and under.

1st.—Roger, b.g., 14.1, aged. Exhibitor, A. Hawes, Toronto.

Best Combination Pony, Mare or Gelding. First prize, Silver Challenge Cup, value \$75, presented by Canadian Pony Society. If won three years by the same Exhibitor to become his property. Cup won in 1904 by Eric Skead, Ottawa; in 1905 by Mrs. Wilmot, Port Hope.

1st.—Tiddley Winks (imp.), iron gr.m., 12, 4 yrs. Exhibitor, Mrs. C. Wilmot, Port Hope.

Best Pony, Stallion, Mare or Gelding, not exceeding 14 hands 1 inch, sired by Registered Hackney Stallion, and to be shown in harness. First prize, \$25. Presented by Canadian Hackney Horse Society.

1st.—326—Hillhurst Bonnie, bay. Exhibitor, C. E. Gudewill, Montreal.

Pony, Brood Mare, 14 hands and under, in foal or with foal at foot.

1st.—Tiddley Winks (imp.), iron gr.m., 12, 4 yrs. Exhibitor, Mrs. C. Wilmot, Port Hope.

2nd.—Dolly, b.m., 13.1½, 7 yrs. Exhibitor, Mrs. E. Nead, Norway.

3rd.—Miss Geary, b.m., 10. Exhibitor, H. C. Bailey, Toronto.

Championship Class—Best Pony in Harness, under Saddle or on the Line, not exceeding 14 hands 1 inch. First prize, Silver Challenge Cup, presented by the Toronto Brewers' Association. If won three times by the same Exhibitor to become his property. Won in 1904 by Graham Bros., Claremont; in 1905 by W. M. Baker, Woodstock.

1st.—Plymouth Horace (imp.) —305—bay, 13, 3 yrs. Exhibitors, Graham, Renfrew Co., Bedford Park.

Championship Class—Best Boy or Girl Rider, to be a son or daughter of a member of the Society. First prize, Gold Medal, presented by the Canadian Pony Society.

1st.—Up-to-Date, b.g., 12, 4 yrs. Exhibitor, Jess. Applegath, Toronto.

POLO PONIES.

Polo Ponies, up to carrying 155 pounds.

1st.—T. K., b.g., 14, aged. Exhibitor, Capt. Van Straubenzie, Stanley Barracks.

2nd.—Lady Jane, blk.m., 14.1, 9 yrs. Exhibitor, A. E. Beardmore, Toronto.

3rd.—The Cat, b.m., 14.1, 8 yrs. Exhibitor, D. W. Baxter, Toronto.

Polo Ponies, up to carrying 185 pounds

1st.—Wild Cat, ch.g., 14.2, 6 yrs. Exhibitor, A. O. Beardmore, Toronto.

2nd.—B. C., b.g., 14, 2 yrs. Exhibitor, A. W. MacKenzie, Toronto.

3rd.—Peggy, b.m., 14.1, 6 yrs. Exhibitor, A. O. Beardmore, Toronto.

Best string of 2 Polo Ponies, any weight, belonging to one member of a recognized Canadian Polo Club. Average excellence of Ponies to count.

1st.—Lady Jane, blk.m., 14.1, 9 yrs.; Fanny, br.m., 14, 7 yrs. Exhibitor, A. O. Beardmore, Toronto.

2nd.—Peggy, b.h., 14.1, 6 yrs.; Wild Cat, ch.g., 14.2, 6 yrs. Exhibitor, A. O. Beardmore, Toronto.

3rd.—T. K., b.g., 14, aged; Kitty, br.m., 14, 5 yrs. Exhibitor, Capt. Van Straubenzie, Stanley Barracks.

SPECIAL CLASSES.

Mare or Gelding, to be shown in Single Harness and Delivery Wagon, actually as used in local deliveries. Horse to count 50 per cent.; wagon and equipment 50 per cent. Horse to have been owned and actually used in delivery by Exhibitor 2 months before date of Exhibition. To be driven by Exhibitor or bona fide employee.

1st.—Golden Rod, ch.g., 16, 5 yrs. Exhibitors, J. W. T. Fairweather & Co., Toronto.

2nd.—Lady Minto, b.m., 16, 8 yrs. Exhibitors, J. W. T. Fairweather & Co., Toronto.

3rd.—Starlight, br.g., 16, 6 yrs. Exhibitor, J. S. Simmons, Toronto.

Mare or Gelding, to be shown in Single Harness and Butcher's Cart or Wagon, as actually used by owner in local deliveries for at least 2 months prior to the Exhibition. Horse to count 50 per cent.; vehicle and equipment 50 per cent. To be driven by Exhibitor or bona fide employee.

1st.—Brownie, br.m., 15.2, 9 yrs. Exhibitors, T. C. Clayton & Sons, Toronto.

2nd.—American Girl, b.m., 15.2, 7 yrs. Exhibitor, A. W. Holman, Toronto.

3rd.—Major, br.g., 16, 5 yrs. Exhibitor, Thos. Bartrem, Toronto.

Military Class. Open to Troopers of the Cavalry and Artillery in No. 2 District. Horse and equipment to count 50 per cent., riding 50 per cent.

1st.—S. Q. M. Steer, Stanley Barracks.

2nd.—Corporal Dünn, Stanley Barracks.

3rd.—Corporal Thompson, Stanley Barracks.

Governor-General's Prize—Best Four-Year-Old Canadian-Bred Gelding or Mare, suitable for riding or cavalry purposes, not less than fifteen hands, and not over fifteen hands 3 inches; to be sired by a Thoroughbred Stallion to be approved of by the Judges.

1st.—The Count, b.g., 15.3, 4 yrs. Exhibitor, Alf. Rogers, Toronto.

2nd.—Dominion Girl, ch.m., 15.3, 4 yrs. Exhibitor, Elam McIntyre, Brampton.

3rd.—Mayflower, ch.m., 15.3, 4 yrs. Exhibitor, Elam McIntyre, Brampton.

THE FRUITS OF ONTARIO 1906

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1907

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TORONTO.

To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report on the Fruits of Ontario for 1906.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1907.

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Fruit Experiment Stations.

BOARD OF CONTROL, 1907.

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Fruits of Ontario.

INTRODUCTION.

When the first fruit trees were planted in Ontario, probably about 150 years ago, the settlers had no reliable information to guide them in selecting varieties or in caring for the trees after they were planted. But the experience of these early settlers was taken advantage of by their descendants who, with the additional knowledge possessed, were able to make some progress, although scattered as they were in those early times without good means of intercourse. The dissemination of information from one to another and to the new settlers who were coming in was slow until the railways were built. Then fruit-growing became much more general, as trees could be easily transported from one part of the Province to another. In 1859 a few enthusiastic horticulturists organized the Ontario Fruit Growers' Association. Meetings were held in different parts of the Province, and the people were urged to plant more fruit. This organization has for the past 47 years by its meetings, annual reports, the *Canadian Horticulturist*, and in many other ways, done very much to bring about the present marvellous development in the fruit industry of Ontario. Realizing that more definite information was needed to guide fruit-growers in the planting of varieties and the culture of fruits, the Association in 1893 urged upon the Government the importance of establishing Fruit Experiment Stations throughout the Province. The idea received the approval of the Government, and in 1894 four stations were established, this number being increased to thirteen in the course of a few years. To these were sent many varieties of fruits, which were tested and reported upon each year by those in charge of the stations. As these experimenters were all practical fruit growers, and in most cases had made a specialty of some kind of fruit, much valuable information regarding varieties and their culture was accumulated by the Department of Agriculture. After the stations were established, it was felt that in due time a hand-book should be published that fruit growers generally might get the full benefit of the information so obtained, and the secretary of the Board of Control, Mr. Linus Woolverton, Grimsby, Ont., was entrusted with the preparation of descriptions and illustrations of the fruits which had been tested. Mr. Woolverton was for ten years engaged in this work, and the results of his labors will be found in the excellent illustrations and full descriptions which appear in this book.

Mr. Woolverton states that, "with a few exceptions, the descriptions have been prepared directly from the fruits themselves, from samples grown in the Province, and the notes of the tree, bush, and vine have been largely made from records taken by the writer during these past ten years of experimental work.

"These descriptions have been verified by comparison with those given in the works of the world's greatest pomologists, such as the '*Dictionnaire de Pomologie*,' by Andre Leroy of France; '*The Fruit Manual*,' by Thomas Hogg of England; '*The Fruits and Fruit Trees of America*,' by Charles Downing, of Newburgh-on-the-Hudson; '*The American Fruit Culturist*,' by J. J. Thomas, of New York State; '*Apples of New York*,' by S. A. Beach, of Geneva, N.Y.; '*The American Horticultural Manual*,' by Prof. J. L. Budd, late of the Iowa State College of Agriculture; '*Plum Culture*,' by Prof. F. A. Waugh, of the Massachusetts Agricultural College; '*Apple Culture*' and '*Plum Culture*,' by W. T. Macoun, of the Central Experimental Farm, Ottawa; '*The Grape Manual*,' by Bush, Son & Misener, of Missouri; the Reports of the Michigan Agricultural College, of the American Pomological Society, of the Ontario Fruit Growers' Association, etc., and many other works.

"These have again been modified by the reports of the experimenters in charge of the fruit stations, when it was proved that certain varieties, otherwise desirable, were not adapted to the districts in which they were tested.

"In the case of some of the newer varieties of small fruits, especially strawberries and some of the raspberries, also in the case of some of the larger fruits which are somewhat rare, the descriptions have been in part made from the reports of the experimenters, or from the reports of reliable pomologists. From Professor H. L. Hutt, of the Ontario Agricultural College, and others, photographs and descriptions of some varieties were obtained."

The nomenclature adopted in these descriptions is based on that of the American Pomological Society, but where names which have been commonly adopted in Ontario would not be easily recognized under this nomenclature the old names have been left unchanged.

These descriptions and illustrations were read and examined by the Board of Control, after which they were submitted to other fruit growers before being adopted, and for this work credit is due to Mr. W. H. Bunting, St. Catharines, Ont.; Mr. Murray Pettit, Winona, Ont.; Mr. W. H. Dempsey, Trenton, Ont.; Mr. C. W. Vanduzer, Grimsby, Ont., and to Mr. W. M. Orr, Fruitland, Ont.

In order that those varieties which are not recommended may not be given too prominent a place and thus perhaps be misleading, the illustrations have been confined to those which have been recommended on one or other of the lists of "Fruits Recommended for Planting in Ontario."

The fruits have been divided into four groups in this work, namely: (1) Tree fruits comprising the Apple, Cherry, Peach, Pear, Plum, and Quince; (2) Grape; (3) Bush fruits, comprising the Blackberry, Currant, Gooseberry, and Raspberry; (4) Strawberry. Within these groups the varieties have been arranged alphabetically, as far as possible, for ease in reference.

As it is the object of the Board of Control to make this work of the Fruit Experiment Stations as generally useful as possible to the fruit growers of Ontario, it was felt that the "Fruits of Ontario" would be incomplete if published without cultural directions, hence these are given. The information regarding apple culture is taken largely from the Ontario Agricultural College Bulletin 144, "Apple Culture," by Prof. H. L. Hutt. The lists of varieties recommended are taken from "Fruits Recommended for Planting in Ontario," Bulletin 147, as prepared by the Board of Control. The Spray Calendar at the end of the volume is largely taken from Bulletin 122, "Spray Calendar," by Prof. Wm. Lochhead. The other matter has been specially prepared for this work.

It is hoped that the objects for which "The Fruits of Ontario" was prepared will be accomplished. These are to assist the fruit grower:—

1. In the selection of those varieties most desirable for planting in his particular locality either for home or for market.
 2. By affording a convenient reference in the identification of varieties now grown in the Province.
 3. By furnishing a reliable description of the size, color, general appearance, and real value of the varieties often incorrectly described in magazines and catalogues.
 4. By giving sufficient cultural directions to enable him to make fruit-growing a success.
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1. Tree Fruits.

Among what are commonly classed as the tree fruits are the apple, cherry, peach, pear, plum, and quince.

So confident are the Ontario fruit growers of the future of the industry and the continued profits which will be obtained from the culture of these large fruits, that many acres of trees are being set out annually.

The great importance of the fruit interests may be fairly judged by the following figures for Ontario from the Dominion census of 1901:—

	Not bearing.	Bearing.	Total Trees.	Bushels.	Value.	Acres.	Capital Value.
Apple Trees.....	1,989,983	7,551,634	9,541,619	13,631,264	\$3,407,815	228,013	\$34,201,950
Peach Trees.....	470,772	811,725	1,282,497	539,482	539,482	38,002	11,400,600
Pear Trees.....	280,175	564,798	844,973	487,759	365,819		
Plum Trees.....	686,628	999,091	1,685,719	337,108	252,831		
Cherry Trees.....	237,792	446,556	684,348	132,177	297,398		
Total.....	3,665,350	10,373,806	14,039,156	15,127,790	4,863,345	266,015	45,602,550

There has been a marked increase in the number of acres planted since the 1901 census was taken, the total number of apple trees, according to the last report of the Ontario Bureau of Industries, being 10,201,766.

THE APPLE.

There is no part of the world where better apples are grown than in the Province of Ontario, and owing to the hardiness of this fruit it can be successfully cultivated over a very large part of the Province.

From the Ottawa River, which bounds the Province on the east, to the great lakes on the west, a distance of about 500 miles, and from the St. Lawrence River and great lakes on the south to latitude 45 degrees, and even 46 degrees, on the north, a distance of about 280 miles, there are many flourishing commercial apple orchards. These produce annually an average crop of about 35,000,000 bushels of fruit. But apple-growing is not confined even to this area, for scattered here and there over the newer parts of Ontario almost up to the Manitoba boundary are trees which are bearing good apples and supplying the settler with fruit for home consumption.

Owing to the material difference in climatic conditions between the extreme southern and the northern parts of the Province, some varieties of apples are more adapted to certain sections than others, not only on account of their varying degrees of hardiness, but because some kinds produce better fruit in certain sections than in others. Furthermore, as apples grown in the southern parts of the Province do not keep as well as those grown in the northern sections, the fruit matures earlier, and hence does not come into keen competition with, perhaps, the same varieties from other sources. Each part of the Province, therefore, where apples are grown can produce fruit which has a fair chance of commanding the highest price on the market. As these climatic conditions cannot be changed, it behoves fruit growers in the south-western peninsula to make a specialty of growing fruit for the early markets, for there is no other section which can compete so favorably in the production and sale of early apples, especially for the rapidly growing market in the North-west.

The fruit growers in the districts bordering on Lake Huron, Lake Ontario and the St. Lawrence River, where the longest keeping apples of best quality are grown, should make a specialty of winter fruit, and by doing so win for themselves a reputation for this class of apples.

In eastern Ontario, where the McIntosh, Fameuse, and other high class early winter dessert apples are grown so successfully, the fruit grower, though at present handicapped in the growing of late keeping varieties, can obtain for his dessert apples the best prices and thus make his orchard as profitable as those in any other part of Ontario.

For the north, there are a number of varieties, mostly of Russian origin, the hardy survivors through many trying winters in the colder parts of Russia, and these, with the hardy crab apples, are proving a nucleus from which it is believed will be developed, by cross breeding with the best Canadian apples, good dessert varieties which will be grown almost to the extreme northern limits of the Province of Ontario.

SELECTION OF VARIETIES.

One of the most important things to be considered in planting an orchard is the selection of varieties. Some of the most serious mistakes in the past have been made in this particular. In many cases worthless varieties have been planted, which is hardly to be wondered at when planters had little more to rely upon regarding varieties than the exaggerated descriptions given by travelling tree agents. But in these days when we have reliable information about all classes of fruits for all sections of the Province published annually and distributed free, as is done in the report of the Ontario Fruit Experiment Stations, there is no excuse for planting anything but the very best varieties suited to each section.

One mistake to be avoided is that of planting too many varieties, particularly in commercial orchards. A half dozen good winter sorts have been found to be sufficient. For home use, however, the list might be doubled, or at least lengthened, to suit the preferences of all members of the family. There should, in any case, be varieties enough to cover the season and give a bountiful supply from earliest to the latest. One or two summer varieties, three or four autumn, and half a dozen winter varieties would be about the right proportion of each to plant.

Another precaution which has to be taken in planning a commercial orchard, is that of planting too large a block of any one variety. For convenience in harvesting it is no doubt best to plant trees of the same variety near together, but on the other hand if these blocks of one variety are too large it may be the cause of poor crops, for there are many varieties which are self-sterile, that is, the pollen which they produce will not properly fertilize their own flowers, although it may be quite potent on the blossom of some other variety. This question has not been sufficiently studied to warrant us in saying definitely just which varieties are self-sterile and which are self-fertile, although from experiments which have been made, the following varieties appear to be more or less self-sterile: Yellow Bellflower, Chenango, Gravenstein, King, Northern Spy, Primate, Rambo, Red Astrachan, Roxbury Russet, Golden Russet, Spitzenburg, and Tolman Sweet. None of these should be planted in blocks of more than three or four rows, without some other variety intervening which blooms about the same time. In orchards where such a mistake has been made, it can be rectified most readily by grafting every third or fourth row with some variety which will insure cross-fertilization.

Both tree and fruit must be considered in the selection of varieties. The tree must have sufficient hardiness for the locality, and it is in this particular that the Fruit Experiment Stations give valuable information to intending planters.

Productiveness is also an important characteristic. Unfortunately some of the varieties of most excellent quality, such as the Blenheim and King, are lacking in this respect, and, while it may be desirable to plant these for home use, still such a defect is a serious one in a commercial orchard. The age of bearing is another characteristic which varies greatly in different varieties. The Northern Spy, for instance, often requires ten to fifteen years before it comes in bearing, while Ontario, Wealthy, and many of the Russian varieties sometimes bear even in the nursery rows, or at least in a year or two after they are transplanted into the orchard. This is a difference which may well be taken advantage of in the arrangement of varieties in the orchard, for, as a rule, those which are slow in coming into bearing make larger trees and are longer lived, while those which begin early and bear heavily are more or less dwarfed in their growth and the trees are shorter lived. For this reason trees of the precocious varieties are often planted as fillers between rows of the later bearing and larger growing kinds.

The most desirable qualities in the fruit itself depend largely upon whether it is for the market or for home use. For home use, good quality is the first consideration. Usually those having a spicy or characteristic flavor, such as the Spy, King, or McIntosh, are most desirable. Apples with an acid or subacid flavor are most in demand on the market; nevertheless a good sweet apple is often much appreciated for home use. For the market, good appearance is the first consideration. No doubt in time buyers will be more discriminating and demand good quality rather than fine appearance, but at present the most saleable apples are those that keep well, are of fair size and an attractive color. Well colored red apples are those in the greatest demand in the Old Country market, a point which should be remembered in selecting varieties intended for export. Good shipping qualities have also to be considered in the selection of commercial varieties, although no doubt the improvement in methods of packing and shipping may render this of less importance in the future than it has been in the past. The Ben Davis apple has long been recognized as one of the best shipping varieties, on account of its firmness and good keeping qualities. On the other hand, the McIntosh is not a long keeper, and is so easily bruised that it cannot be shipped satisfactorily in barrels. But with improved methods of packing and shipping, it may be shipped to any of the European markets and even placed on sale with the Ben Davis, and it is a question how long the Ben Davis, with its inferior quality, will be able in such competition to hold its place in the market. Those who champion the Ben Davis may take exception to the comparison just made because of the relative difference in season of the two varieties. Nevertheless, we believe that it will be safer in the future for growers to look more to the quality of the variety than has been done in the past, for in due time buyers will no doubt become more discriminating and demand apples of the very best quality.

ORDERING AND OBTAINING TREES.

A complete list of the nurserymen of this Province is published each year in the Report of the Inspector of Fumigation, and most of our leading nurserymen advertise in the agricultural and horticultural papers. Upon application, any of these men are glad to quote prices at which they can supply stock.

It is well, when ordering nursery stock, to order early. Too many leave such a matter till planting time, when they might as well have had their order in several months sooner. By ordering early they are more likely to obtain just what is wanted, and if the nurseryman has not the desired varieties on hand, he can obtain them elsewhere by the time they are needed.

When the trees arrive from the nursery, it is best to unpack them as soon as possible, and, if it is not convenient to plant them at once, the roots should be

spread out and buried in a deep trench till they can be permanently planted. The longer the trees are to remain in this position the more carefully they should be heeled in.

VARIETIES RECOMMENDED.

General Lists. After testing a large number of varieties of fruit at the various fruit stations, the Board of Control has decided upon the following as the most desirable for general planting.

District Lists. The District Lists given by the various experimenters show varieties especially adapted to the sections represented by their stations.

The term *Commercial* is intended to include the varieties most desirable for market purposes, and the term *Domestic* those most desirable for home uses, either cooking or dessert.

These lists are given, as far as possible, in the order of ripening.

It is realized that there are many varieties not included in these lists which may do well *under special conditions*, yet which are generally not considered as desirable as those mentioned.

GENERAL LIST OF THE MOST VALUABLE VARIETIES FOR MARKET APPROVED BY THE BOARD OF CONTROL.

Summer.

Astrachan: Adapted to all sections except the extreme north.

Duchess: Adapted to all sections.

Fall.

Gravenstein: Adapted to all sections except the St. Lawrence River and other northerly portions of the Province.

Wealthy: Particularly valuable for northern sections.

Alexander: Especially for northern districts.

McIntosh: Adapted especially to the St. Lawrence River district, but can be grown over a much wider area.

Fameuse: Adapted especially to the St. Lawrence River district, but succeeds well over a much wider area.

Blenheim: Adapted to all sections except the St. Lawrence River district and northerly portions of the Province.

Winter.

King: Adapted only to the best apple sections, and succeeds best when top grafted on hardy stocks.

Hubbardston: Adapted to the best apple sections.

Greening: Adapted to the best apple sections.

Baldwin: Succeeds best on clay land, and is adapted to the best apple districts.

Spy: Adapted to the best apple districts, but can be grown with success farther north by top-grafting on hardy stocks. This is also a good method of bringing it into early bearing.

Ontario: An early and abundant bearer, but short lived. Recommended as a filler among long-lived trees. Adapted to same districts as Northern Spy, which it somewhat resembles.

Stark: Adapted to best apple districts.

VARIETIES ESPECIALLY ADAPTED TO HOME USE.

Summer.

Transparent: Adapted to all sections.

Primate: Adapted to best apple sections.

Sweet Bough: Adapted to best apple sections.

Duchess: Adapted to all sections.

Fall.

Chenango: Adapted to best apple sections.

Gravenstein: Adapted to best apple sections.

Wealthy: Especially adapted to northern sections.

McIntosh: Especially adapted to northern sections.

Fameuse: Especially adapted to northern sections.

Blenheim: Adapted to best apple sections.

Winter

King: Adapted to best apple sections. Should be top grafted.

Wagener: Adapted to best apple sections.

Swayzie: Adapted to all sections except most northerly.

Greening: Adapted to best apple districts.

Tolman: Adapted to best apple districts.

Spy: Adapted to best apple districts, but will succeed farther north if top grafted.

Mann: Adapted to best apple districts, but will succeed farther north if top grafted.

HARDY VARIETIES RECOMMENDED FOR SECTIONS NORTH OF LATITUDE 46 DEGREES.

Summer.

Yellow Transparent, Charlamoff.

Fall and Winter.

Duchess, Wealthy, Hibernial, Longfield, Patten, Whitney, Hyslop, Scott Winter.

CRABS SUITABLE FOR THE WHOLE OF THE PROVINCE.

Whitney: A large crab of high quality, suitable for planting in the extreme north where other apples will not succeed. May be used for dessert or cooking.

Martha: An early crab of fair quality.

Transcendent: Yellowish crab, season early autumn.

Hyslop: Dark, rich red crab, of late season, quality only fair.

DISTRICT LISTS RECOMMENDED BY THE EXPERIMENTERS.

Niagara District: By Linus Woolverton, Grimsby, Ont.

Commercial: Astrachan, Duchess, Gravenstein, Alexander, Blenheim, Cranberry Pippin, Hubbardston, King, Greening, Baldwin, Spy.

Domestic: Early Harvest, Sweet Bough, Duchess, Chenango, Gravenstein, Shiasawsee, Fall Pippin, Fameuse, Swayzie, Wagener, Yellow Bellflower, Spitzenburg, Tolman.

Bay of Quinte District: By W. H. Dempsey, Trenton, Ont.

Commercial: Duchess, Gravenstein, Trenton, Alexander, Wealthy, Fameuse, McIntosh, King, Greening, Baldwin, Ontario, Seek-no-Further, Spy, Tolman, Ben Davis, Stark.

Domestic: Benoni, Primate, Gravenstein, Fameuse, McIntosh, Grimes, Greening, Ontario, Spy, Tolman, Swayzie.

Burlington District: By A. W. Peart, Burlington, Ont.

Commercial: Astrachan, Duchess, Wealthy, Ribston, Blenheim, King, Greening, Baldwin, Spy.

Domestic: Astrachan, Sweet Bough, Gravenstein, Wagener, Seek-no-Further, Golden Russet.

Lake Simcoe District: By G. C. Caston, Craighurst, Ont.

Commercial: Duchess, Peerless, Alexander, Wolf River, Blenheim, Powankee, Stark, and the following if top-worked on hardy stocks: Greening, King, Ontario, Baldwin, Spy.

Domestic: Astrachan, Primate, St. Lawrence, Fameuse, McIntosh, King, Spy.

Lake Huron District: By A. E. Sherrington, Walkerton, Ont.

Commercial: Astrachan, Duchess, Wealthy, Fameuse, McIntosh, Blenheim, Greening, Baldwin, Spy, Golden Russet, Ben Davis.

Domestic: Transparent, Astrachan, Duchess, McIntosh, Grimes, Blenheim, King, Spy, Golden Russet.

St. Lawrence District: By Harold Jones, Maitland, Ont.

Commercial: Duchess, Alexander, Wolf River, Scarlet Pippin, Fameuse, McIntosh, Baxter, Milwaukee, Golden Russet.

Domestic: Transparent, Brockville Beauty, Scarlet Pippin, Fameuse, McIntosh, Blue Pearmain, Golden Russet, Yellow Bellflower.

Algoma District: By Charles Young, Richard's Landing, Ont.

Commercial and Domestic: Astrachan, Transparent, Duchess, Charlamoff, Gideon, Longfield, Wealthy, Scott Winter.

SITE OF THE ORCHARD.

The large inland lakes surrounding the southern portion of this Province have a wonderfully ameliorating effect upon the climate for some distance from their shores, and as a rule, our most extensive commercial orchards are in proximity to these large bodies of water. There are, however, in the interior many localities quite as favorable for fruit growing, but in such locations the question of site and exposure has to be more carefully considered. The site usually selected for the orchard is one near the buildings, which may be all right if these are on the highest ground, for such grounds are not only best drained but are least liable to untimely frosts. Good atmospheric drainage is often quite as important as good water drainage, and cold air, like cold water, runs down hill. Only a few feet of elevation above a wide adjoining area may be sufficient to enable trees in full bloom to escape a frost which destroys the crop on the lower level. On level lands there is practically no atmospheric drainage and the orchardist must take his chances and make the best of it.

EXPOSURE.

Where the land is rolling, and there is a choice of exposure, the situation should be carefully considered, for in many cases this may be the difference between success and failure. As to which is the best exposure, depends largely upon the surroundings. In proximity to large bodies of water the best exposure is toward the water. In localities subject to late spring frost the safest exposure is towards the north, as this helps to retard the period of bloom till danger of frost is past. On a northern exposure trees are less likely to suffer in times of severe drouth, and there is also not so much injury from sun scald, a most serious trouble in northern localities. For the reasons given a northern or eastern aspect is, as a rule, preferable to a southern or western one, and also because there is less exposure to our strongest prevailing winds, which come from the south-west.

WINDBREAKS.

Protection from the prevailing winds is another matter that requires due consideration. The shelter accorded by a high hill or natural belt of timber is perhaps the ideal one, but when these do not exist, the planting of a windbreak is necessary. The best trees for windbreaks are some of the evergreens, such as Norway and White Spruce, the Austrian and Native White Pines. The Norway Spruce is most used because it is a rapid grower, and the young trees may be

obtained very cheaply. The windbreak should be planted at the same time as the orchard; it will then be effective by the time the trees come into bearing. A single row may be sufficient, although in very exposed places, a double row, with the trees set alternately, is preferable. The trees should be at least six or eight feet apart, and even ten or twelve feet is better when the trees grow up. The trees should not be planted nearer than forty feet from the first row of apple trees, as if planted too near, drifts of snow may cause injury in winter, and insects are more troublesome in summer where there is not a good circulation of air. The trees in the windbreak should be well cultivated, the same as the trees in the orchard, until they become well established. Neglect of this is the main cause of failure in setting out windbreaks.

THE SOIL AND ITS PREPARATION.

The apple tree readily adapts itself to a great variety of soils, yet there are certain kinds upon which it does much better than others. Light sandy soils are usually deficient in plant food, and are not retentive of it when fertilizers are applied to them. The trees upon such soils may do fairly well for a time, but as a rule they are less productive and shorter lived than on heavier soils. On the other hand, heavy clay soils may contain plenty of plant food, but they are difficult to work, and unless very carefully managed bake so hard that the tree will not thrive upon them. The ideal soil is a happy mean between these extremes, a friable loam. It may be called a sandy or a clay loam, as either sand or clay predominates in its composition, and is all the better if of a limestone formation upon an open subsoil.

One of the first requisites in any orchard soil is good drainage. Fruit trees will not thrive upon undrained soil. If the land is not naturally well drained, it should be thoroughly underdrained.

Good preparation of the soil previous to planting is very essential. Trees set on unprepared soil are seriously handicapped at an important stage of their life and often they never overcome it. Land which has been exhausted by grain production is in poor condition for the growing of trees, although it may be greatly improved by growing and plowing down two or three crops, such as rye, clover, or vetches, as a green manure. Probably no other crop leaves the ground in better mechanical condition for the growth of trees than clover. Its roots penetrate the soil deeply and leave it well filled with vegetable matter or humus.

There has been much diversity of opinion regarding the value of subsoiling in preparing the land for trees. But there is little room for doubt that it is of much benefit on land where the subsoil is hard and impervious to water. The subsoiler should follow in the furrow of the ordinary plow, loosening the subsoil as deeply as possible. Where this is not done, clover roots are the next best thing as subsoilers.

The preparation of the ground for planting should begin by a good deep plowing in the fall, and it would be all the better if it could be ribbed up as is now frequently done in preparing ground in the fall for spring seeding. This insures good surface drainage and quick drying of the ground in the spring. All that would then be required in the spring would be to harrow down the ridges and loosen up the ground as deeply as possible with a spring tooth cultivator.

PLANTING.

Great care should be taken and good judgment shown in laying out the orchard and in planting the trees.

The proper distance apart for planting depends altogether upon the ultimate size which the trees may attain, which in turn depends upon the variety, the soil,

and the locality. The varieties grown in our most northern orchards seldom spread more than twenty or twenty-five feet, while the kinds grown in the more favored apple sections of Southern Ontario often have a spread of forty feet. The best guides to intending planters is to observe carefully the distances required for full grown apple trees in the neighborhood. In southern Ontario this will be found to be from thirty-five to forty feet, throughout central Ontario thirty to thirty-five feet, while in the northern sections where only the hardiest kinds are grown, twenty-five feet will be found quite sufficient. It is wise to allow plenty of space, so that there will be no crowding when the trees have reached their full size. Planting too close is a far more frequent and serious mistake than planting too far apart.

A plan quite frequently adopted, particularly in some of the large American orchards, is to use some of the small-growing early-bearing varieties, as fillers between the large-growing varieties. The Duchess, Ontario, and Ben Davis, for example, are planted alternately with large growing kinds, such as Baldwin, Greening, and Spy.

In such cases, the large-growing kinds are set at the maximum distance apart, and the smaller kinds between them. By the time the larger kinds begin crowding, the smaller ones will have paid for their keep and that of the others, and can be cut out to make room for the larger trees. The greatest objection to this plan is the danger that the fillers may be left so long before they are removed that the value of the whole orchard may be impaired.

There is a diversity of opinion as to the best time for planting, although it may be done successfully any time when the tree is dormant, either in the spring or autumn. In favorable localities and with hardy varieties it may be done quite as well one season as another, but for general planting the spring is the safest time in our rigorous climate.

The trees should be planted in rows as straight as it is possible to make them. Straight rows add not only to the appearance of the orchard, but to the convenience of cultivation. One of the best means of getting the rows straight is to stake out the position for each tree before beginning to plant.

Great care should be taken to prevent the roots of the trees drying while they are out of the ground. If it happens to be hot and windy at the time of transplanting, it is a good plan to puddle the roots in soft mud as soon as they are taken from the packing box or trench, and in carrying the trees about the orchard, it is well to keep the roots covered with a wet blanket or piece of old carpet.

The hole for the tree should be wide enough to hold the roots without cramping or crowding, and should be deep enough to admit of a few inches of fine mellow surface soil being filled in the bottom, and still have the roots an inch or two deeper than they were in the nursery row. The roots should be spread out in their natural position and should be covered with moist mellow surface soil. It is well, in digging the holes, to have the surface soil placed at one side and the subsoil on the other, so that in refilling, the surface earth may be placed next the roots and the subsoil left for the top. If the soil has been properly prepared it is seldom necessary to water the roots at the time of transplanting, but care must be taken to ensure the soil moisture from below coming up to the roots. This may be done by tramping the earth firmly as soon as the roots are well covered, and leaving only the top soil untramped to act as a mulch and retain the moisture below. The neglect of this firming of the soil around the roots is one of the most common causes of failure in the transplanting of trees. If watering is necessary, a small pailful poured in as soon as the roots are nearly covered, is of more use than a half dozen on the surface after the planting is finished.

All torn, bruised, or injured roots should be cut back, with smooth cuts, to sound wood. Smooth cuts callous over quickly and new roots are the more readily sent out. Trees obtained from the nursery, no matter how carefully they may have been taken up, have lost the greater part of their root system, and in order that they may make a satisfactory growth when transplanted the top must also be cut back to a similar extent to restore the balance. This cutting back, however, can be most satisfactorily done after the trees are planted, when they are held firmly by the soil, and more careful attention can be given to shaping the head of the young tree. Closely associated with the heading back of the top at the initial pruning of the tree, is the question of determining the height at which the head should be formed. On this, as in many other points of orchard management, there is a variety of opinions. Some prefer high heads, because of the greater convenience for cultivation and working underneath; while others prefer them low, because of the greater convenience in pruning, spraying, and harvesting. There are other reasons, however, why low headed trees are preferable; in exposed locations the trees and crop are less likely to suffer from violent winds, and in northern localities the trees with short trunks and low spreading branches are much less subject to injury from sun scald, the most serious tree trouble of the north. At the Algoma Fruit Experiment Station it has been found advisable to start the head not more than a couple of feet from the ground, while in the more favored sections the custom is to have at least four feet of trunk. This is the height at which the head is usually started on two or three year old trees as obtained from the nursery, and for this reason it is better for the northern planter to get two year old, rather than three or four year old trees, so that he can start the head at whatever height he wishes. In this connection it may be stated that tree trunks do not lengthen, except by pruning off the lower branches, so that at whatever distance from the ground the lower branches are left, that will be the permanent length of the trunk.

Three branches are enough to leave to form the main limbs or framework of the tree top. These should be evenly spaced around the trunk to give a well balanced and symmetrical top, and they should also be placed on the trunk so as to distribute evenly the weight of the top and avoid bad crotches which are liable to split down with weight of crop. It is particularly important at this stage that great care should be taken to train the young tree in the way it should go, and much can be done in training and directing growth by heading back to buds pointing in the direction we wish the new branch to take.

CARE OF THE ORCHARD AFTER PLANTING.

In a newly-planted orchard the trees occupy but a small portion of the land, and they cannot be expected to give any returns for at least five or six years. It is advisable, therefore, that some other crop be grown in the orchard which will pay for the labor spent upon it till the apple trees come into bearing and require all the space. It is by injudicious cropping, however, that young orchards are often most seriously injured. It should not be forgotten that the apple trees are the first consideration, and that whatever cropping is done in the orchard must not interfere with them in the least.

In some cases the spaces between the trees may be planted with small fruits, such as raspberries, currants, or gooseberries, but these should not be planted within nine or ten feet of the tree, nor should they occupy ground more than six or seven years.

Hoe crops, such as corn, roots, potatoes, etc., have generally been recommended as the best to grow in the orchard, because of the opportunity they afford for cultivation. This may be all right as far as it goes, but these crops

draw heavily upon the plant food in the soil and return very little in the way of roots or plant residue. If such crops are successively grown for several years, they are almost sure to seriously deplete the soil of fertility, unless extra care is taken to maintain it by the application of manure or fertilizers. Probably on the whole the least objectionable cropping is a well arranged rotation of crops, in which clover and hoed crops alternate frequently enough to keep the ground in good condition. Some of these crops harbor mice, and whenever such occur in the rotation precautions must be taken at the approach of winter to protect the trees from their ravages.

During all this intercropping a strip in which the trees are growing must be left for regular cultivation, and this strip should be widened each year as the trees increase in size. No cropping should be attempted under the head of the trees, and intercropping should be discontinued as soon as the trees require all the space.

CULTIVATION.

Cultivation improves the physical condition of the soil by breaking up the soil particles and presenting a greater feeding surface to the roots. By warming and deepening the soil, it permits of a greater depth of feeding area. Every soil particle is surrounded by a thin film of moisture, consequently the finer the soil particles the greater the surface area to hold moisture. A dry earth mulch or dust blanket on top checks the evaporation of moisture from below. Cultivation renders plant food more readily available by promoting nitrification and the decomposition of organic matter in the soil.

Knowing this to be the case, many growers have given thorough cultivation a fair trial, and have satisfied themselves that for most sections of Ontario clean cultivation with cover crops is more profitable than sod. There are indeed few cases where sod is more desirable than cultivation; these are where the soil is fertile and contains an abundant supply of moisture.

As soon as possible after the trees are set, a strip on each side should be cultivated to loosen up the soil which has been tramped down during planting. Each year this strip should be widened, so that no crop intended for harvesting is grown beneath the branches of the trees.

Cultivation should begin as early as the ground is dry enough in the spring. The first tool to be used in most cases is the plow. It is well to plow the land about five inches deep during the first few years after setting to encourage deep rooting. As the trees get older the depth of plowing should be gradually lessened, until by the time the orchard is in full bearing, three to four inches is sufficient.

It is a good practice to roll each evening what has been plowed during the day, particularly if the ground is inclined to be lumpy. The soil is much more easily pulverized when freshly plowed than if allowed to lie exposed to the weather for several days.

COVER CROPS.

The value of growing cover crops in the orchard is being more appreciated every year by fruit growers, who in times past viewed with alarm the injury which occurred from root killing where the soil was bare in winter. A cover crop is a covering of vegetation in the orchard during the latter part of summer and early winter, and is useful in many ways, of which the following are some of the most important: (1) A cover crop, by adding a large amount of fibre to the land, prevents hard soils from cementing or puddling. (2) On bare and rolling

land, where the rains quickly run off and snows blow off the high portions, a growing crop tends to hold these until they have time to soak into the soil. (3) Land covered by a growing crop dries out more quickly in the spring, owing to the transpiration of moisture through the leaves, and consequently may be plowed under earlier in the season than land which is bare. This is a very important point, as it enables the orchardist to gain several days in the busy season of spring. (4) Ground covered with vegetation will hold the snows in winter and thus prevent deep freezing, thereby avoiding the liability of root killing. (5) A cover crop affords the most economical means of furnishing a supply of humus in the soil. (6) The roots of a cover crop assist the tree roots in rendering available certain mineral plant food in the soil. (7) A large amount of plant food is liberated in the soil after the tree growth has ceased. This is taken up by the growing crop and held in a readily available form for the following season. (8) Leguminous crops, such as clover, vetch, alfalfa, peas, and beans, by virtue of certain bacteria which form nodules on the roots, are able to assimilate nitrogen from the air. As nitrogen is one of the most expensive fertilizing elements, the value of this class of plants cannot be too highly appreciated.

Cover crops should be sown about the middle of July so that they may make a good growth the same season, and in the colder parts of the Province, the seed may be sown during the first week of July, as the season is shorter than in the more favored sections. It is also wise to check the growth of the trees about this time, so that they may mature their wood before winter sets in. The thorough tillage which should have been practised up to this season, leaves the ground in the best possible condition to give the young plants a start. The crop should be plowed under as early in the spring as possible, and cultivation should begin at once. If the crop is large and the soil rather dry, this is imperative, as the large amount of vegetable matter turned under seriously interferes with capillary action and leaves the surface soil unduly dry.

That a cover crop may be of the greatest value, it should be capable of withstanding the winter and continuing its growth next spring. This, however, is not a necessity, as many of the ordinary crops which will not live through the winter are valuable for this purpose.

Different soils require different kinds of crops. This has led to a division of cover crops under several classes. The most important are the nitrogen gatherers, which through the agency of the nodules on the roots can make use of the nitrogen of the air. Such plants as clover, vetches, alfalfa, peas, and beans, belong to this class, and should be used where the soil is deficient in nitrogen. Another class is known as the potash liberators, such as turnips and rape, which, although they do not add anything to the soil, as do the leguminous plants, yet change the form of the mineral potash so that it may be more readily acted upon by the roots of succeeding crops. Then there is a third class, commonly grown, such as rye, oats, and buckwheat, which are valuable chiefly on account of the humus formed by their development.

Hairy Vetch, sown at the rate of thirty-five pounds per acre, forms a very close mat over the ground. This is a valuable crop owing to the fact that it collects nitrogen, lies close to the ground so that it does not inconvenience the pickers when gathering the fruit, and also withstands the cold winter and continues its growth early in the spring.

Red Clover and Mammoth Clover, sown at the rate of twenty pounds per acre, are about equal in value, make a fair growth, are low growing, and winter well on drained soil.

Crimson Clover has not made quite as good growth as the red or the mammoth, nor will it stand the winter in the colder sections, which is a serious disadvantage.

Alfalfa, or lucerne, is one of the best leguminous crops for dry land. It makes a good growth and winters well. There is a mistaken impression that alfalfa will not make sufficient top the first season. Thirty pounds of seed per acre, sown in July, will give a good stand the same season.

Rape has given good results in the colder sections. It makes a heavy growth of stiff stems, which, although nearly all killed in winter, stand up well enough to hold the snows. Rape can scarcely be recommended for fruiting apple orchards, as it remains wet the greater part of the day, making the work of harvesting very unpleasant. It may be used to good advantage in the rotation, especially if few fruits are to be harvested.

Rye, the favorite crop of many growers, gives a fair amount of top and winters well. One advantage of rye is that it may often be grown on lands not in a physical condition for the growth of clover. In this way humus may be added to the soil, and conditions made more favorable for the growth of clover.

MAINTAINING FERTILITY.

The maintainance of fertility is more frequently neglected in the orchard than on any other part of the farm. Trees, even on poor land, will produce fruit, but it is only on soils where fertility is maintained that paying crops are produced. Each year that fruit is harvested some plant food is removed. If profitable crops are to be expected the supply of plant food in the soil must be maintained.

The most essential elements for the production of fruit are nitrogen, potash, phosphoric acid, and lime. Nitrogen encourages leaf and wood growth, which are essential to the development of the tree and to the production of the best quality of fruit. Potash is an essential constituent in the growth of fruits. It constitutes a large proportion of the ash of the wood and more than 50 per cent. of the ash of the fruit, and is also associated with the development of flavor in the fruit. Phosphoric acid is essential to the development of the tree and the proper ripening of the fruit. Lime is not in itself an essential element, but assists in liberating plant food. On a soil deficient in lime, growth often continues so late that the wood does not mature nor the fruit ripen properly.

Barnyard manure supplies nitrogen, potash, and phosphoric acid, and improves the physical condition of the soil. Cover crops may take the place of barnyard manure to improve the physical condition of the soil, and the leguminous ones may add all the nitrogen required. Concentrated fertilizers or commercial plant foods may be used in conjunction with cover crops to supply all the plant food necessary for the growth of trees. In the use of commercial fertilizers it is well to proceed cautiously, and, by carefully conducted experiments, ascertain what elements of plant food the soil may be deficient in, and what amounts it may be necessary to apply to get the best results. Unleached wood ashes contain a small quantity of phosphoric acid, seldom exceeding $1\frac{1}{2}$ per cent., a larger amount of potash, varying from 5 to 7 per cent., and also a certain amount of lime. Where pure wood ashes can be procured at a price not exceeding ten cents per bushel, they afford an economical source of plant food. An application once in two or three years will usually give excellent results, especially on light soils which are most lacking in potash. Muriate of potash is another economical form in which to obtain potash. Phosphoric acid may be purchased in the form of superphosphate. Nitrogen may be procured in the form of sodium nitrate, but

leguminous cover crops furnish a much cheaper source of this essential but costly element.

PRUNING.

The object of pruning is to form a vigorous and evenly balanced tree, which will produce annually a paying crop of good-sized, well-colored fruit. Unpruned trees produce many small-sized unsalable apples. Pruning lessens the number of apples per tree, but at the same time increases the size and improves the quality of those produced. A heavy crop of good-sized fruit is not so serious a drain on the vitality of the tree, nor on the fertility of the soil, as the same weight of smaller apples would be, for it is the production of the seed which makes the greatest drain on the tree and soil.

Pruning should be practised every year without fail from the time the tree is planted. In this way the operation is never a severe one, and the removal of the large limbs becomes unnecessary. Limbs growing too strongly in any particular direction, which are liable to upset the balance of the tree, should be headed back. Where two limbs cross, one of them should be removed. Branches growing across, from one side to the other, should be cut out. Care should be taken to leave sufficient twigs in the centre to protect from sun scald. Much may be done in directing growth by heading back to a bud pointing in the desired direction. It is while the trees are young that the greatest care in training is required.

A properly pruned apple tree should be open enough to admit sunlight and permit of free circulation of air. Its lower branches should be trained high enough to admit of easy cultivation, yet the top should not be so high that spraying and harvesting are rendered difficult. Varieties differ more or less in their habit of growth, and, while it may be advisable to modify this to some extent, it is not well to attempt to change it unduly. Long bare branches should be avoided, and the formation of fruit spurs should be encouraged on all parts of the tree.

The best time for pruning is just before growth begins. Wounds made at that season soon heal over. It is not well to prune when there is frost on the wood. Pruning while the tree is dormant tends to increase the growth of wood. Summer pruning encourages the formation of fruit buds, but it is not advisable to do much of it, as the removal of any considerable amount of the leaf area tends to check the vigor of the tree. Pruning by the removal of buds may be practised at any season of the year.

The thumb and finger may be used for the removal of sprouts and buds during the summer. A pair of small pruning shears will remove all twigs less than half an inch in diameter. For larger limbs a sharp fine-tooth saw is needed. Make all cuts as smooth as possible and close to the main stem. When a large limb has to be removed, it may be advisable to cut twice, the first some inches out to avoid splitting, and the second to shorten the stub. A common mistake is the leaving of long stubs which cannot heal over before rot begins. Where it is necessary to remove large limbs, the wounds should be covered with grafting wax or thick lead paint to prevent the entrance of spores which cause decay.

GRAFTING.

Grafting is the operation of inserting a scion into a stock, usually for the object of changing the variety of fruit produced. Trees bearing undesirable fruit may be top-grafted with some valuable variety. Many choice half-hardy varieties may be successfully grown by top-working on some hardy stock. Especially desirable characteristics in any variety may be perpetuated by grafting. Individu-

ality is quite as marked in plants as in animals. A certain tree may possess some desirable quality, and this may be preserved and perhaps improved upon by selection. It is advisable when cutting scions to select from those trees which have the desirable characteristics most strongly marked. Nurserymen, as a rule, do not pay sufficient attention to the source from which they secure their scions. The individual orchardist may greatly improve his plantation by top-grafting with scions from a tree having the desired qualities most strongly marked.

*Grafting is usually performed in the spring. It is essential that the cambium layer of the scion and stock be in contact on at least one side. From this mucilaginous layer, lying between the wood and the bark, the new cells are formed which in time unite the parts and cover the wound. It is necessary to cover the wounds made in outdoor grafting to prevent the entrance of rot-producing spores. For this purpose wax is generally used.

A good grafting wax may be made by melting together four pounds resin, two pounds beeswax, and one pound tallow. Cool by pouring into a tub of water. Then work up into bars or balls which may be kept in any cool place until required. To economize wax, cloth is sometimes dipped into the hot wax, making wax-cloth. This is more difficult to use than pure wax. The wax may be melted and carried in a glue pot and applied with a brush, or, as is more commonly done, it may be kept in water warm enough to keep the wax pliable so it may be readily applied by hand. It is well to keep the hands greased to prevent the wax from adhering to the fingers.

There are two common methods of top-grafting: (1) Whip or tongue grafting, which is practised upon small branches and young trees; (2) Cleft grafting, which is usually performed on branches from one-half to two inches in diameter.

In whip grafting the stock is cut with a bevel about one inch long, and the scion cut to fit that bevel. Both bevels are cut into slightly and the tongue of one fitted into the notch of the other. The cambium layers must be in contact on at least one side. After the scion is set the wound should be covered with wax or similar substance to exclude the air.

Large trees should not be entirely changed over in one year. The first year select the main branches; the second year part of the remainder, and finish the third year. In this way much of the annoyance caused by the growth of water sprouts is avoided.

When cutting off large branches for cleft grafting it is wise to cut twice, making the first cut a few inches above the position chosen for the scion. Then cut off the stub at the desired point, and avoid the danger of tearing the bark. With a chisel or grafting iron split the branch just far enough to admit the scions. Too deep a split weakens the stock, and the scions will not be held sufficiently firm. It is well to avoid grafting two horizontal limbs, one directly above the other. The tendency of new growth is upward, and the growths from the lower one will interfere with the upper. In branches, other than those growing perfectly upright, the split should be made parallel to, rather than at right angles to the ground.

The scion should be made wedge-shaped, with bevel about one inch long, starting at each side just at the base of a bud. Make the scion three buds long, cutting off just above the third bud. It should be cut a little thicker on the side next to the bud, so that the stock may pinch tightly on that side to insure a close contact of the cambium layers.

Open the cleft with the wedge end of the grafting chisel and insert one or two scions, as may be thought necessary. Place the lower bud of the scion to the outside. Do not force the scion down, but open the cleft by enough leverage

* For more detailed information send for Bulletin 144, "Apple Culture."

on the chisel to admit the scion freely. Setting the scion with the top pointing slightly outward insures contact in at least one point. After setting the scions, cover all wounds with wax.

It is sometimes necessary to remove part of the water-sprouts, which usually start during the summer, to give the scions room for proper development. By the following spring the scions should have made sufficient growth to require all space in that part of the tree, and all other growth should be removed.

SUN SCALD.

Sun scald is an injury to trees which occurs most frequently in the northern districts. It is most serious on young trees, but may also affect the upper side of the large branches in older trees. It is caused by the action of the hot sun on the trunk and branches in the early spring. The first indication is an unhealthy appearance of the bark on the south and south-west sides of trunk and upper side of large branches, the affected parts soon turn brown, then black, and finally die.

In districts where sun scald is apt to occur, it is well to head the trees low and incline the stem slightly to the south-west. In this way the branches afford some shade to the trunk. Anything which will shade the trunk in early spring will prevent the injury. For this purpose the most convenient of the following materials may be used: cornstalks, birchbark, building paper, or a veneer of thin wood, such as is used in basket making. The large branches of old trees should receive natural protection from the small branches and twigs of the top. For this reason severe pruning of the top is not advisable in northern districts.

When trees are badly affected they usually die, but where the injury is slight, and is noticed soon after it occurs, treatment is practicable. Cut away the injured parts, and cover the wound with grafting wax or some material which will keep the wood from drying out. If the tree is healthy and vigorous, the annual growth spreading in from the sound parts soon repairs the injury.

PROTECTION FROM MICE.

During the past two or three years, mice have become a serious menace to young orchards. The rapid increase in numbers may be largely accounted for by the indiscriminate destruction of the farmer's best friends, the hawks, that feed largely on mice by day, and the owls, which take up the work by night. By carefully protecting the hawks and owls for a few years, their numbers will again increase, so that the equilibrium of nature may be restored. In the meantime something must be done to protect the trees against the rodents.

Mice seldom harbor in a green crop, and on clean fields they find no protection. They are found chiefly along the fence lines and in old meadows. As there is usually some shelter afforded the mice near orchards, it is advisable to guard against their depredations. In localities where the snow falls early and remains on the ground all winter, the simplest means of protecting the trees is to tramp the snow firmly about the base of each tree early in the winter. Where the ground is not continuously covered with snow during the winter, a mound of earth about the tree is sometimes all that is required to divert the runways of the mice. Building paper cut into strips which will reach about one foot high when tied about the trunk of the tree in autumn has been found to be both a cheap and an effective preventive.

Badly girdled trees usually die. When the part girdled is small and is covered before the wood dries out with grafting wax or other substance which will protect the inner tissues, the tree may be saved. If the girdled part extends entirely around the tree, it will be necessary to establish some connection between

the cambium above and below the injury. This may be done by bridge-grafting. For this purpose use long scions cut to a bevel on each end. Insert one end above and the other end below the girdle, making sure that the cut surfaces are in contact with the cambium layer. A sufficient number of these scions should be put in to convey the cambium from the top to the roots and all cut surfaces exposed should be covered with wax.

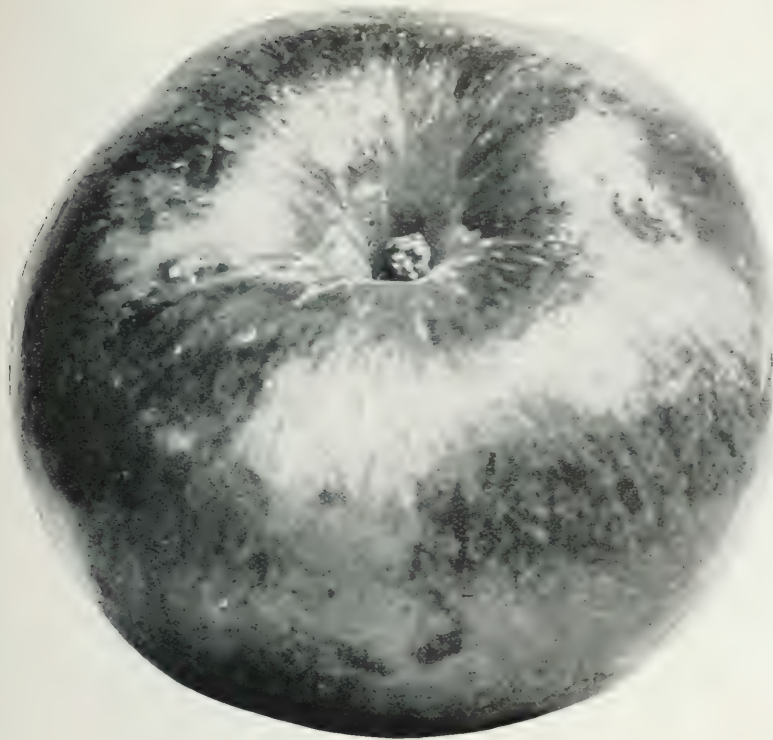
PICKING.

Apples should be carefully picked by hand, without breaking the skin or bruising the fruit in any way. Summer varieties for immediate home use or special local trade should be allowed to ripen on the tree; but if intended for distant markets or storage they should be picked when fully mature, but before they have commenced to mellow. Winter varieties should hang on the tree until they have reached full size and have taken on good color. Apples picked while still immature as a rule keep longer than if allowed to fully ripen on the tree, but they do not develop the full color nor the best quality. No sharp distinction can be made between green and mature, or between fully mature and over ripe fruit; one blends imperceptibly into the other. Experience teaches at what stage to harvest the crop, in order to secure the highest quality and best keeping properties in the fruit. Sometimes, with summer varieties, it is necessary to go over a tree twice, picking the most mature specimens first and leaving the remainder for a week or two in order that they may more perfectly develop. Round bottom baskets or pails should be used for picking, and it is better to have them lined with cloth to prevent bruising the fruit. Fruit should not be piled on the ground, but should be placed at once on the sorting table or be placed in boxes or barrels for removal to the packing house. The apple should be picked with the stem on but without breaking off the fruit spur, as is likely to occur if the fruit is picked too green. Spring waggons should be used to convey the fruit to and from the packing house.

When the trees have been properly pruned, the fruit may all be harvested from ladders. A short step ladder is convenient for the underside and low branches of the tree. For the upper branches light cedar ladders of suitable length will be found very convenient. Extension ladders have been praised very highly in the past, but as they are both awkward and cumbersome, practical growers are abandoning them. The practice of climbing through the tree to gather the fruit, and letting the baskets down to the ground by means of a rope, is out of date, and is not practised in commercial orchards. Inexperienced pickers often lose a great deal of time by not picking clean as they go, making it necessary to carry the ladder back and forth. Each time the ladder is moved all apples in reach should be picked.

DESCRIPTION OF VARIETIES

ALEXANDER. (*Emperor Alexander*.)



ORIGIN: introduced into England from Russia in 1817.

TREE: hardy, spreading, vigorous, productive; bears early.

FRUIT: very large size; form round, ovate, conical; skin greenish yellow, russet dots, streaked or splashed with red; stem $\frac{3}{4}$ inch long, set in a deep cavity; calyx large, nearly closed, set in a deep, even basin.

ALEXANDER.

FLESH: yellowish white; crisp, not very fine, moderately juicy; flavor subacid, pleasant.

QUALITY: dessert, fair; cooking, good.

VALUE: home market, first class; can be successfully shipped to Great Britain in cold storage.

SEASON: September to November.

ADAPTATION: quite general, the tree being hardy.



SECTION OF ALEXANDER.

ASTRACHAN. (*Red Astrachan.*)

ASTRACHAN

ORIGIN: imported from Sweden to England in 1816, and widely planted in Southern Ontario for a summer market apple. Scarce another apple of its season equals it in beauty of appearance, for, in addition to its rich crimson color, it is often covered with pale white bloom. Selected fancy grades of this apple are usually in good demand in our home markets, but sometimes there is a surplus, and prices even for Astrachans are very low. Promising for export in cold storage.

TREE: upright; very vigorous; begins bearing early; very productive.

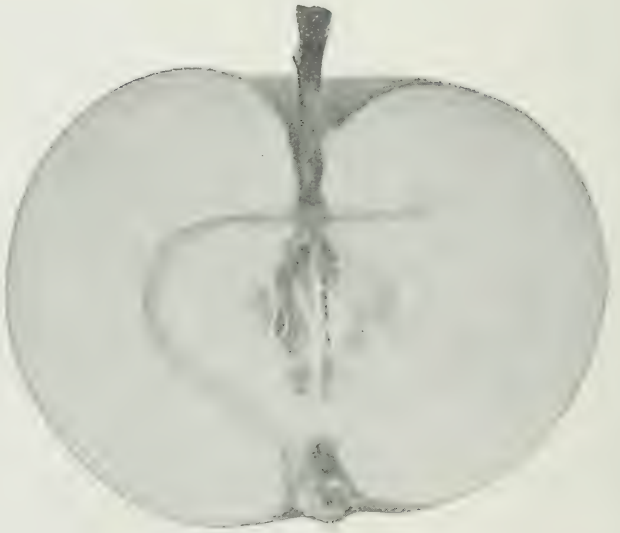
FRUIT: medium to large round, narrowing towards apex; skin, deep crimson when exposed to sun, yellowish green in shade, often covered with a thin, whitish bloom; stem, stout, three-quarter inch long, in a deep cavity; calyx closed in a shallow, somewhat irregular basin.

FLESH: white, crisp, juicy, tender, becoming mealy when over-ripe; acid, almost too tart to be counted very good for either dessert or cooking.

VALUE: first-class where an early summer apple is in demand.

SEASON: early to mid August.

ADAPTATION: In Niagara district perfectly hardy and productive. Not considered profitable in Lake Simcoe district by some growers.



SECTION OF ASTRACHAN.

BALDWIN.

ORIGIN: The Baldwin originated in the State of Massachusetts and has been for many years the most popular winter apple for either home or foreign markets. The average



BALDWIN.

yield from full grown trees each alternate year is about eight barrels per tree, and in some instances much larger. Large orchards of this variety have been planted in the apple growing counties of middle and southern Ontario, where for lack of other varieties to fertilize the blossoms, and owing to the prevalence of apple scab, they have proved unproductive.

TREE: not hardy outside the best fruit districts; upright, spreading, vigorous grower, usually very productive.

FRUIT: large, roundish, ovate; skin yellow, shaded and splashed with crimson and red, spotted with some russet dots; stem heavy, three-quarters of an inch long, in a broad cavity; calyx closed, in a deep plaited basin.

FLESH: yellowish white; tender, juicy; flavor subacid, sprightly, aromatic.

QUALITY: dessert fair; cooking good.

VALUE: market first class, especially for export.

SEASON: November to March.

ADAPTATION: adapted only to the best apple districts, where it is one of the most profitable varieties.



SECTION OF BALDWIN.

BAXTER (*Larue*.)

A fine large red apple, which brings a high price in the British market if grown free from fungous spots, to which, unfortunately, it is somewhat subject.

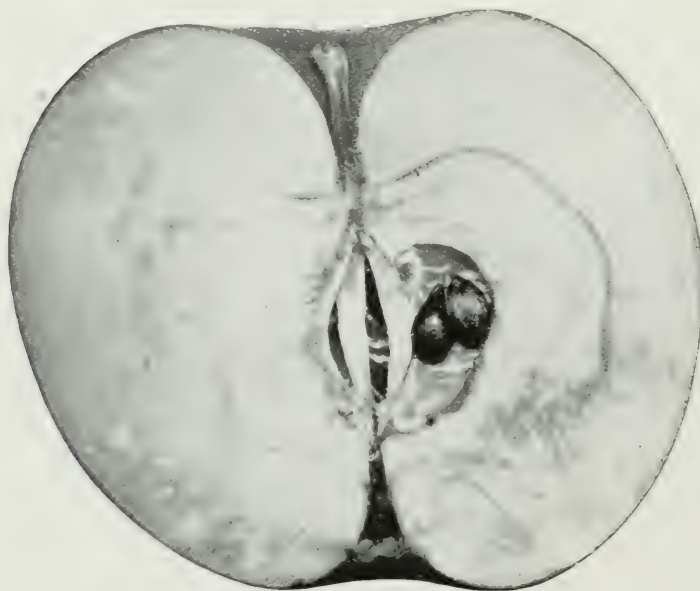
ORIGIN: with Mr. Larue, near Brockville, Leeds Co., Ontario, but introduced by Mr. Baxter.

TREE: healthy, vigorous, hardy, moderately productive.

FRUIT: size large, to very large; form roundish, slightly conical; color red with obscure stripings of dark red, and numerous prominent grey dots; stem half an inch long, in a narrow, funnel form cavity, calyx nearly closed, in a large regular basin.



BAXTER.



SECTION OF BAXTER.

FLESH: white, often streaked with red; texture moderately firm, not very juicy; flavor slightly acid.

QUALITY: dessert medium; cooking good.

VALUE: home and foreign market, first class.

SEASON: October to January.

ADAPTATION: has proved hardy and profitable in Eastern Ontario and the Lake Simcoe District.

BEN DAVIS.

One of the most popular market apples in the southwestern and western states because of its great productiveness, hardiness, good color and its keeping and shipping qualities. Highly valued by some growers in Canada, but condemned by others on account of its inferior quality.



BEN DAVIS.



SECTION OF BEN DAVIS.

ORIGIN : brought from North Carolina to Kentucky with a lot of other seedling apples by Mr. Ben Davis. Scions taken from Kentucky to Southern Illinois about 1820.

TREE : spreading, fairly vigorous and very productive.

FRUIT : medium to large roundish, truncated conical, unequal ; color yellow, striped and splashed with red, having scattered aureole dots ; stem slender, one to one and a half inches long in a deep cavity ; calyx erect, partly closed in a deep, wide basin.

FLESH : dull, white, mild, subacid.

QUALITY : dessert, poor ; cooking, fairly good.

VALUE : home market, second class ; foreign market, first-class.

SEASON : January to May.

BLENHEIM.

(Blenheim Orange, Blenheim Pippin.)

An apple that is constantly gaining in favor with both grower and consumer, because of its size, its beauty, its evenness of form and general excellence for cooking and dessert purposes. It is grown in the counties of Prince Edward' Victoria, Lincoln and elsewhere, and is highly valued as a commercial apple. It certainly deserves to be more generally planted.

ORIGIN : a garden in Woodstock, England, near the residence of the Duke of Marlboro'; shown at a meeting of the London Horticultural

Society in 1819, and introduced into France into 1840.

TREE : very vigorous in habit and consequently a scant bearer while young, but a regular and abundant bearer as it grows older; dwarfed on the Paradise stock, the tree becomes an early bearer.

FRUIT : large to very large on favorable soil; form roundish oblate, slightly smaller at the apex than at the base, very regular; color yellowish, splashed with dull red on sunny side and streaked and with deep red dots small and distinct; stem short, three-quarters of an inch long, stout in a large russeted cavity; calyx large and very open, with short segments placed in a large green cavity.

FLESH : cream white fine, crisp, moderately juicy, flavor sweet, spicy, slightly acid.

QUALITY : dessert good; cooking very good.

VALUE : home and foreign markets, first class. **BLENHEIM.**

SEASON : November to February.

ADAPTATION : best apple districts only.



BENONI.

A summer apple little grown in Ontario, and not highly esteemed for commercial purposes.

ORIGIN : Massachusetts.

TREE : spreading, fairly vigorous ; hardy ; fairly productive.

FRUIT : size scarcely medium ; form oblate conical ; skin rich yellow, blushed with red in the sun with a few scattered bright dots ; stem half an inch long in a deep cavity ; calyx erect, partly closed in a deep basin.

FLESH : color yellow ; texture tender and juicy ; flavor rich subacid.

QUALITY : dessert very good ; cooking good.

VALUE : market second class.

SEASON : August to September.

BIETIGHEIMER.

A fall apple of magnificent appearance, attaining a very large size.

ORIGIN : Germany.

TREE : habit vigorous, spreading ; an abundant biennial bearer ; hardy.

FRUIT : size very large, sometimes immense ; form round, oblate ; skin whitish yellow almost covered with pale red, and having a few obscure stripes and splashes, and numerous whitish dots ; stem very short, in a wide, regular shallow cavity ; calyx closed in a narrow slightly corrugated basin.

FLESH : white ; texture firm, juicy ; flavor brisk, subacid.

QUALITY : poor for dessert ; fair for cooking.

VALUE : home and foreign market second class.

SEASON : September.

BLUE PEARMAIN.

A variety found in many of the older orchards ; not productive enough to be profitable.

TREE : strong, vigorous, healthy ; a light bearer.

FRUIT : size, very large ; roundish, regular, slightly conical ; color, splashes and stripes of dark purplish red over a dull yellow ground, solid red in sun, with heavy white bloom and distinct white, russet dots ; stem three-quarters of an inch long, set in a wide, deep cavity ; calyx open in a smooth, shallow basin.

FLESH : color yellowish ; texture firm, moderately juicy ; flavor mild acid, rich, aromatic.

QUALITY : first rate.

VALUE : not profitable on account of unproductiveness.

SEASON : November to February.

BOGDANOFF.

A promising apple for the north ; not recommended where Spy and Baldwin succeed.

ORIGIN : Russia.

TREE : growth vigorous ; habit upright.

FRUIT : size medium ; form roundish, somewhat ribbed ; color green or yellowish green often with faint bronze blush and numerous small white dots ; stem short, set in a shallow cavity ; calyx set in a broad, deep plaited basin.

FLESH : color white ; texture tender and juicy ; flavor pleasant, subacid.

QUALITY : dessert fair ; cooking good.

VALUE : market second class.

SEASON : November to February.

BOIKEN.

Tested at our Simcoe station since 1896 and esteemed worthy as a commercial apple.

ORIGIN : tree imported from Russia by Prof. Budd : named after Dike-Warden Boike of Germany.

TREE : a fair grower ; habit willowy, like Golden Russet ; an early and abundant bearer.

FRUIT : size medium : form oblate conical ; skin smooth, yellow with red cheek and many minute white dots ; stem long in a wide, deep cavity ; calyx in a wide, wrinkled basin of moderate depth.

FLESH : color white ; texture firm, juicy, fine grained ; flavor sprightly, refreshing, subacid.

QUALITY : dessert fair ; very good for cooking.

VALUE : thought well of at Lake Simcoe Station for market.

SEASON : November to February.

BOTTLE GREENING.

An apple grown in some parts of Ontario for home uses, for which its excellent quality makes it very desirable : it is not recommended for the commercial orchard, because the fruit is rather tender for shipment to distant markets.

ORIGIN : according to Chas. Downing this variety was found near the border line between Vermont and New York State, and takes its name from a hollow in the original tree, where workmen were accustomed to keeping their bottle.

TREE : vigorous, productive.

FRUIT : medium to large : form oblate, slightly conical, color yellowish with bright red on one side, a thin bloom and a few light dots ; stem half an inch long in a deep, funnel-form cavity ; calyx nearly closed, in a moderately deep, slightly plaited basin.

FLESH : greenish white ; texture fine, tender, juicy, almost melting ; flavor subacid.

QUALITY : dessert, very good.

VALUE : home market, first class ; foreign market, second class.

SEASON : November to February.

BROCKVILLE (*Brockville Beauty*).

A seedling of Fameuse which is as yet grown only to a limited extent in the eastern part of the Province. This fruit is inclined to run small as the trees overload.

ORIGIN : near Brockville, Ontario.

TREE : hardy, moderately vigorous ; bears heavily every alternate year.

FRUIT : form conical ; size medium to small ; skin white, almost covered with bright red.

FLESH : color white ; texture crisp, tender, breaking : flavor brisk acid.

QUALITY : dessert and cooking good.

SEASON : late August to mid September.

CABASHEA. (*Twenty Ounce Pippin*.)

Not worth planting in Ontario. Through confusing its name with that of Cayuga Red Streak, often called Twenty Ounce, this apple has been widely planted in our Province. The tree is unproductive and the fruit, although large and fine in appearance, drops early and is poor in quality.

ORIGIN : unknown.

TREE : vigorous, spreading, unproductive.

FRUIT : large, roundish oblate, slightly conical : skin yellowish green, shaded dull red on the sunny side : stem five-eighth of an inch long, stout, in a wide cavity of moderate depth : calyx open in a wide shallow basin ; core medium.

FLESH : white, firm, coarse, subacid, only fair for cooking, useless for dessert.

VALUE : tested twenty years at Maplehurst, Grimsby, and found unprofitable on account of unproductiveness.

SEASON : October to December.

CANADA RED. (*Red Canada of Beach*.)

ORIGIN : unknown : Beach says it was brought from the neighborhood of Toronto, into Western New York State.

TREE : a strong grower, productive in some places, while a shy bearer in others, and hence is not recommended.

FRUIT : medium to large, roundish conical : skin yellow, well splashed and washed with deep, rather dull red : dots fairly numerous, large, yellow, prominent : cavity deep, narrow : stem short, slender : basin narrow, shallow, slightly wrinkled : calyx small, partly open.

FLESH : yellowish, tender, moderately juicy, mildly subacid with a pleasant but not high flavor ; core of medium size.

QUALITY : good.

SEASON : mid to late winter.

CAYUGA. (*Cayuga Red Streak, Twenty Ounce*.)

A large, fine looking cooking apple for late autumn : a good market sort : grown in limited quantities in Ontario.

ORIGIN : Connecticut.

TREE : vigorous ; compact ; productive ; an annual bearer ; on large trees, growth is straggling.

FRUIT : very large, roundish, uneven ; skin greenish yellow to yellowish white, with marblings and stripes of red and crimson, and a few large grey dots : stem three quarters of an inch long, in a deep, slightly russeted cavity : calyx small, half open in a smooth shallow basin.

FLESH : yellowish white, texture coarse grained, tender, moderately juicy : flavor brisk, subacid, pleasant.

QUALITY : dessert poor, cooking good.

VALUE : market first-class.

SEASON : late autumn to early winter.

COLVERT.

A fairly good fall market apple, being large in size and rather attractive in appearance, but of fair quality only. It has been widely planted in Ontario for market. For kitchen use it is much inferior to the Gravenstein.

ORIGIN : uncertain.

TREE : very vigorous and very productive.

FRUIT : large, form oblate, slightly conical : skin greenish yellow, with cheek and faint stripes of dull red : stem stout, half an inch in length.

FLESH : color greenish white ; texture tender, moderately juicy : flavor subacid, ordinary.

QUALITY : dessert, fair ; cooking, good.

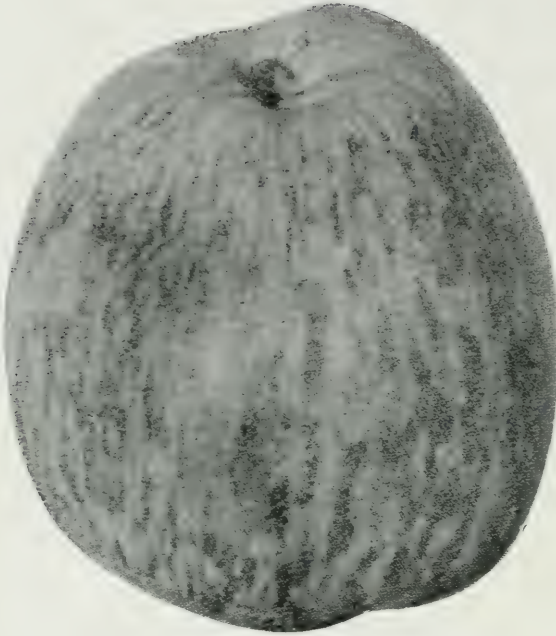
VALUE : second-class for market.

SEASON : October to November.

ADAPTATION : succeeds at Georgian Bay and Bay of Quinte stations, and is widely grown in the older apple sections of Ontario.

CHARLAMOFF.

(Pointed Pipka, Arabka).



CHARLAMOFF (after S. B. Green).

One of the best hardy varieties of its season which has been successfully grown at our Algoma station. It is classed by the Minnesota State Horticultural Society as one of four varieties having the first degree of hardiness.

ORIGIN: Russia; imported by Budd and Gibb.

TREE: very hardy; habit spreading; growth vigorous; very productive.

FRUIT: size above medium; form oblong, truncated, angular, ribbed;

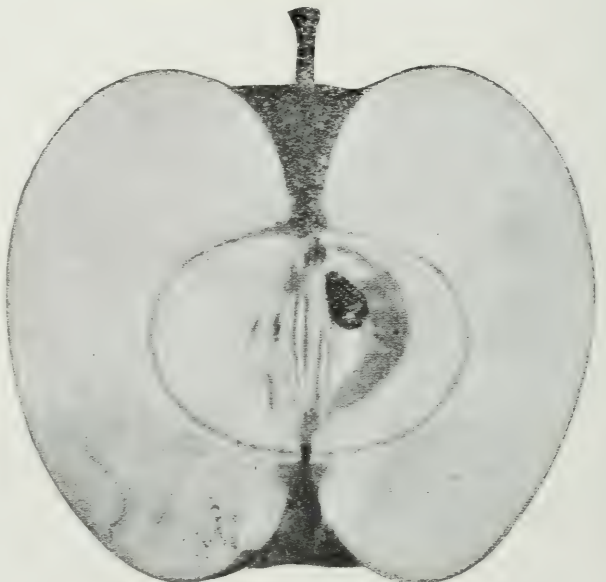
skin light yellow, covered with dark crimson stripes and splashes, with red cheek and white, minute dots; stem medium stout, in a deep, acute, russeted cavity; calyx open, sometimes closed, in a wide, shallow, wrinkled basin.

FLESH: color white, stained with red under the skin; texture somewhat coarse, juicy; flavor subacid, pleasant.

QUALITY: dessert good.

VALUE: market second class, being very perishable.

SEASON: August, just before Duchess.



SECTION OF CHARLAMOFF.

CRANBERRY PIPPIN.

An apple worthy of being planted in southern Ontario as a fancy variety for export; although the quality is ordinary and not suitable for dessert, its extreme beauty when opened in mid-winter, its large and even size, and the productiveness of the tree every alternate year, make it a desirable variety.

Sometimes, however, this variety is subject to warts and knots which mar its beauty.

ORIGIN: accidental, on a farm, near Hudson N. Y.

TREE: very vigorous, healthy, spreading, and productive.



CRANBERRY PIPPIN.



SECTION OF CRANBERRY PIPPIN.

FRUIT: medium to large, roundish, oblate; skin smooth, yellow shaded and striped with two shades of red; stem slender, one-eighth of an inch long in a deep cavity; calyx closed, in a wide, wrinkled basin.

FLESH: color white; texture firm, crisp, coarse, moderately juicy; flavor subacid.

QUALITY: dessert, poor, cooking fair.

VALUE: market second class.

SEASON: November to February.

ADAPTATION: southern portions of the Province, especially along the shores of the lakes.

DUCHESS.

(Oldenburg of Downing, *Borovitsky of Royal Horticultural Society, 1824.*)

In cold storage, this apple may be profitably exported to Great Britain. It succeeds in every part of Ontario where the apple can be grown, and its beauty always brings for it the top price in the market.

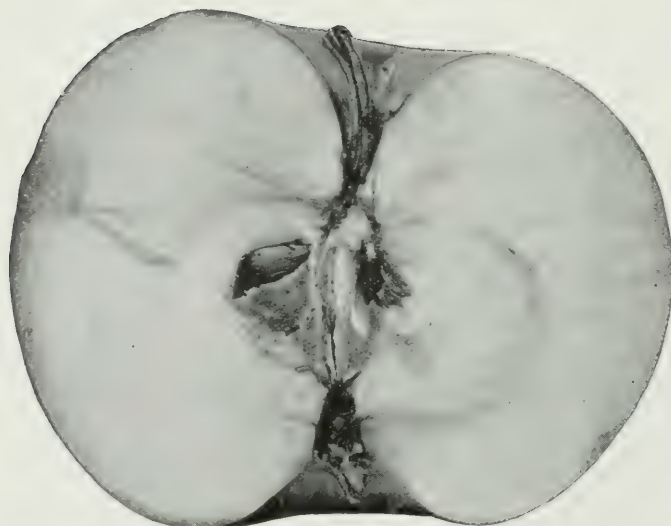
ORIGIN : Taurida Gardens, St. Petersburg, Russia, in 1824 ; introduced into England by the Royal Horticultural Society in 1824.

TREE : very hardy, very vigorous and an early and abundant bearer.

FRUIT : medium to large ; form regular, roundish oblate, one sided ; skin greenish yellow,



DUCHESS



SECTION OF DUCHESS

with bright red stripes, splashes and numerous russet dots ; stalk slender, three-quarters of an inch long, set in a deep funnel-shaped cavity ; calyx long, closed, in a deep broad plaited basin.

FLESH : greenish, turning yellowish white at maturity ; texture fine, firm and juicy ; flavor brisk, refreshing acid.

QUALITY : dessert fair, cooking good.

VALUE : first class of its season for home market.

SEASON : August and September.

ADAPTATION : general. Succeeds fairly well wherever apples are grown in the Province, and does exceptionally well on the borders of Lakes Ontario and Erie.

EARLY HARVEST.

The best apple of its season for dessert, but of late years rendered worthless in Ontario by scab, which not only spoils its appearance, but lessens its size and injures its flavor. The Early Harvest and Fall Pippin are the two apples which seem to be least able to resist this terrible fungus, and which most favor its spread. Unless, therefore, the fungus is checked by spraying with the Bordeaux mixture, this apple must be left out of the list of desirable varieties.

ORIGIN : United States, in cultivation since about 1700, A.D.

TREE : only medium in vigor, never attaining a large size, old trees averaging from one-half to two-thirds the size of Greening trees of the same age ; upright and spreading ; productive, considering the size of the tree and the fruit ; yield of full grown trees averages about four barrels every alternate year.

FRUIT : medium round, oblate ; skin smooth, bright straw color when ripe, with a few faint dots ; stem short, one-half to three-quarters of an inch, in a medium cavity, often russeted ; calyx closed in a shallow, sometimes slightly plaited basin.

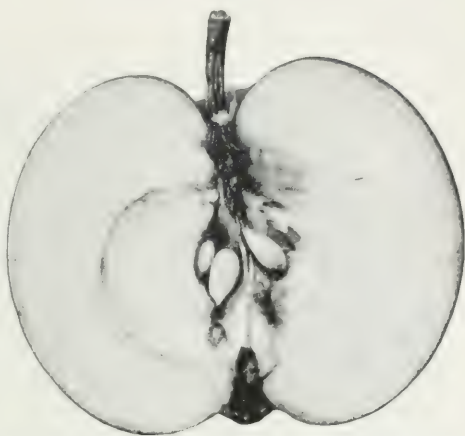
FLESH : white, fine grained, juicy, crisp, tender ; flavor rich, sprightly, pleasant subacid.

SEASON : late July to early August.

QUALITY : dessert best, cooking good.

VALUE : home market first class ; foreign market second class.

ADAPTATION : succeeds in the best apple districts, but is much subject to scab.

FILLBASKET. (*Kentish Fillbasket*.)

An old English variety of great beauty of appearance and enormous size, often exceeding four inches in diameter. It is not, however, much grown in the commercial orchards of Ontario, being a fall apple, ill adapted to export, unless by cold storage, and of very ordinary quality.

ORIGIN : England.

TREE : vigorous, fairly productive, semi-hardy.

FRUIT : very large, globular, slightly ribbed ; color smooth, shiny, light green or pale yellow, sometimes almost white, and on sunny side splashed and striped with bright red ; stem stout, short, $\frac{1}{4}$ inch long, set in a large cavity ; calyx closed, set in a large plaited basin.

FLESH : fine grained, tender and juicy ; flavor mild, subacid.

QUALITY : poor for dessert, good for cooking.

VALUE : home market second class ; foreign market third class.

SEASON : October to December.

ADAPTATION : North shore Lakes Ontario and Erie, east shore Lake Huron.

FALLAWATER.



FALLAWATER

A large apple, of even size and fine appearance, which is grown for market quite extensively in Pennsylvania, Ohio, and in some of the Western States, and to some extent in Ontario. Were it more uniformly productive, we could recommend it as a profitable commercial variety.

ORIGIN: Pennsylvania.

TREE: a vigorous grower; fairly productive.

FRUIT: size large to very large;

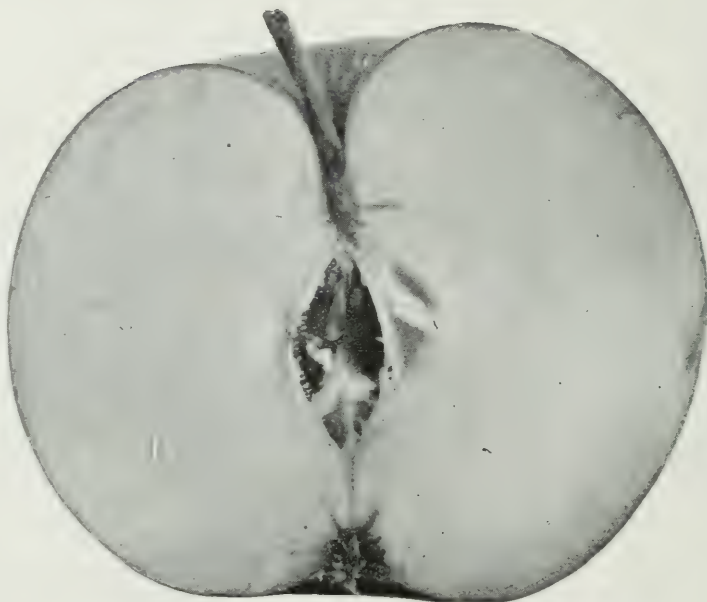
form round, regular, smooth; color pea green, shaded on sunny side with brownish red cheek, dots sparse, large light green; stem half an inch long, stout, set in a narrow, moderately deep cavity; calyx small, nearly closed, set in a shallow wrinkled basin.

FLESH: greenish white; texture fine-grained, firm, moderately juicy; flavor mild subacid, fair.

QUALITY: fair for cooking.

VALUE: home and foreign market first class.

SEASON: January to March.



SECTION OF FALLAWATER

ADAPTATION: successfully grown at our Bay of Quinte station and all parts of the Province farther south; also in the Lake Huron district, but in same localities it is said to be short-lived.

FALL PIPPIN.



A general favorite as a fall cooking apple, and possessing a fairly good flavor as a dessert apple. It was at one time planted very freely, but of late years it has been discarded because of its liability to the apple scab.

ORIGIN : America, probably from seed of Holland Pippin.

TREE : habit stout, vigorous, spreading; head round; long lived, some trees in Niagara district are now over 100 years of age; fairly productive.

FRUIT : large; form roundish, sometimes obscurely ribbed; skin yellow, often with red cheek and a few small grey dots; stalk half to three quarters of an inch long, set in a small, moderately deep

FALL PIPPIN.

cavity; calyx small, open in a small, moderately deep basin.

FLESH : greenish white; texture tender, mellow, and fairly juicy; flavor brisk, pleasant, aromatic.

QUALITY : dessert fair; cooking best.

VALUE : home market first class, foreign market second class.

SEASON : November and December.

ADAPTATION : hardy in the best apple districts, but very subject to scab.



SECTION OF FALL PIPPIN.

FAMEUSE.

(Snow, Pomme de Neige).

The most highly valued of all table apples, and but for one fault the Fameuse would be the most profitable of all, especially in Eastern Ontario, where it attains its highest perfection. The fault is that it is quite subject to the apple scab, so that in some places the fruit is entirely worthless.



FAMEUSE.

ORIGIN : Province of Quebec, probably from seeds brought from France ; it is often called Snow, from the color of its flesh, and its proper name signifies a famous apple.

TREE : moderately vigorous ; moderately productive ; hardy.

FRUIT : medium size, roundish ; skin, light green, striped and shaded with two shades of red, often nearly covered with deep red ; stalk slender, half an inch long, in a small deep cavity, calyx small, segments often recurved, set in a shallow, slightly plaited basin.

FLESH : snow white ; texture tender, very fine grained, breaking, juicy ; flavor, aromatic.

QUALITY : dessert first-class ; cooking fair.

VALUE : first class for all markets, when perfect in form and free from spots.

SEASON : October to December.

ADAPTATION : general, but specially adapted to eastern portion of the Province.



SECTION OF FAMEUSE.

GIDEON.

A very pretty apple, but inclined to rot at the core: it is less highly colored than Duchess. These faults will prevent its being popular as an export apple.

ORIGIN : by Peter M. Gideon, Excelsior, Minn., U.S.; of same parentage as Wealthy.

TREE : vigorous, hardy, holds fruit well, productive.

FRUIT : large, round or slightly conical; skin white, with bright red cheek shaded with deeper red splashes; dots white, obscure; cavity broad, deep, regular or slightly corrugated; stem one inch long, slender; calyx half closed, in a small, corrugated basin.



GIDEON.

FLESH : white, flaky, tender, almost melting, yet crisp, fine, juicy, and of good flavor.

QUALITY : dessert, poor; cooking, fair.

VALUE : home market second class; foreign third class.

SEASON : September to November; October at Ottawa.

ADAPTATION : only valuable in the north.



SECTION OF GIDEON.

GOLDEN RUSSET.



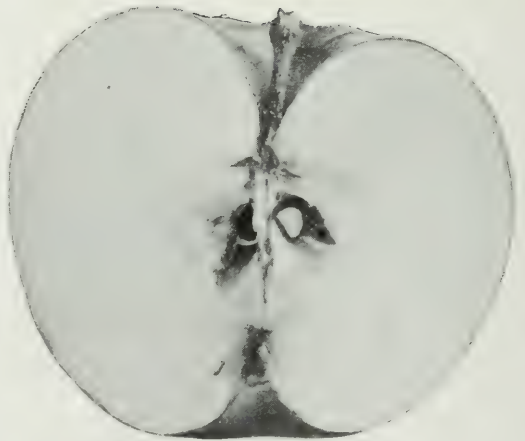
GOLDEN RUSSET.

This is the Golden Russet of Western New York. (It is sometimes incorrectly called American Golden Russet, which is a tender fleshed apple only keeping until January). This apple is very valuable in the colder sections of the Ontario apple belt, the tree being comparatively hardy, and the fruit of high commercial value; in the warmer sections it is considerably grown in the older orchards, but not much planted of late years, because it is only of medium size, tedious to harvest, and inclined to drop early.

TREE : fairly vigorous, shoots slender, or willowy, speckled; habit irregular; only fairly productive.

FRUIT : size medium; form roundish, slightly oblong, slightly flattened; skin covered with thick russet, occasionally showing a patch of greenish yellow; stem slender, half an inch to one inch long; not subject to scab.

FLESH : color yellowish, texture fine grained, firm, crisp; flavor aromatic, subacid.



SECTION OF GOLDEN RUSSET.

QUALITY : dessert fair; cooking good.

VALUE : export first class.

SEASON : keeps till May in cold cellar, but is inclined to shrivel if the air is dry and warm.

GRAVENSTEIN.



SECTION OF GRAVENSTEIN.

A favorite commercial apple in Nova Scotia, but altogether too little cultivated in Ontario, considering its many excellent characteristics. It has no competitor in its season for either home use or market.

ORIGIN: according to Hogg, the original tree grew in the garden of the Duke of Augustenberg, at the Castle of Gravenstein in Schleswig-Holstein in Germany, and was still standing about the year 1850. Leroy inclines to accept a statement by Hirschfeld, a German pomologist, who in 1788 wrote the first description of the apple, and stated that it was brought to Germany from Italy. The earliest trace of this apple we can find, dates

back to about 1760. It is now widely grown in Western Europe, and is a favorite everywhere.

TREE: much more vigorous in growth than ordinary varieties, and when in bloom remarkably beautiful with its extraordinary sized pure white blossoms; hardy and productive.

FRUIT: large to very large; form oblate conical, somewhat one-sided and more or less pentagonal; skin greenish yellow to orange, beautifully striped and splashed with two shades of red; stem stout, about half an inch in length, set in a deep, narrow cavity; calyx partially closed, wide long segments set in a wide irregular, slightly russet basin.

FLESH: white; texture crisp and very juicy; flavor rich, vinous and aromatic.

QUALITY: dessert, very good; cooking, good.

VALUE: home market, first class; foreign market, first class.

SEASON: September and October.

ADAPTATION: general in the best apple sections.



GRAVENSTEIN.

GREENING. (*Rhode Island Greening*).

One of the staple varieties for profit in Ontario orchards. No one variety, except the Baldwin, was more widely planted in our Province previous to 1875, but since that time it has been

liable to scab some seasons, especially in cases where proper spraying is neglected. Its color is against it in foreign markets, and yet, as it becomes known, the demand for it increases. It has a tendency to drop early, especially south of Lake Ontario, and, therefore, needs to be gathered in good season, about the first of October, as a rule. Remarkable instances of productiveness have been reported. One large tree at Maplehurst, Grimsby, nearly one hundred years planted, yielded twenty barrels one season, and fifteen barrels another.

ORIGIN : Rhode Island.

TREE : very vigorous, spreading, a crooked grower ; fairly hardy ; very productive ; succeeds well on a great variety of soils.



GREENING.

FRUIT : large, roundish, sometimes a little flattened, regular, unless overgrown : color green, becoming lighter as it ripens, often showing a blush when well exposed to the sun ; dots light grey, aureole, numerous toward the apex ; stem seven-eighths of an inch long in a smooth, narrow cavity ; calyx partly closed in a nearly smooth shallow basin.

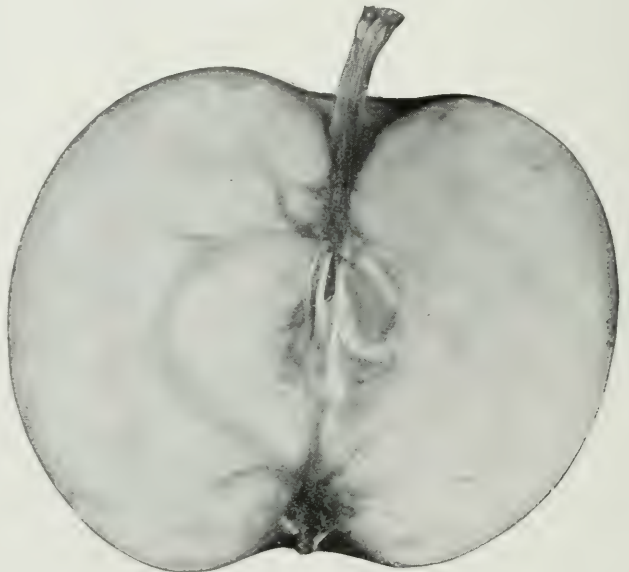
FLESH : white, with a greenish tint, yellowing as it matures ; texture fine grained, crisp, juicy ; flavor rich, slightly aromatic, pleasant, subacid.

QUALITY : dessert, medium ; cooking, best.

VALUE : home and foreign markets, first class.

SEASON : December to February.

ADAPTATION : succeeds in the best apple districts.



SECTION OF GREENING.

GRIMES. (*Grimes Golden Pippin*.)

GRIMES.

An apple that has a good reputation in some parts as a winter dessert apple, on account of its excellent quality and its rich golden color; not planted extensively in the commercial orchards of Ontario.

ORIGIN : Virginia; on the farm of Thomas Grimes.

TREE : vigorous. branches with knobs at base; not hardy very far beyond north shore of Lake Ontario; a regular, annual bearer.

FRUIT : size medium; form roundish oblong; color rich golden yellow with russet dots; stem slender in a deep cavity; calyx partly closed in a deep, wrinkled, abrupt basin.

FLESH : yellow; texture firm, crisp, juicy; flavor rich, aromatic, spicy, subacid.

QUALITY : dessert best; cooking poor.

VALUE : market, second class.

SEASON : December to January.



SECTION OF GRIMES.

GRINDSTONE. (*American Pippin.*)

Valuable chiefly for its long keeping, and for cider.

ORIGIN : United States.

TREE : hardy, vigorous, productive.

FRUIT : size medium ; form regular, roundish oblate ; skin dull green with patches and stripes of dull red and numerous dots ; stem short, stout in a deep, slightly russeted cavity ; calyx large, open, in a deep, medium sized, slightly wrinkled basin.

FLESH : color yellowish white ; texture firm, crisp, not very juicy, flavor brisk acid.

QUALITY : second rate for cooking ; third rate for dessert.

VALUE : second class for market purposes.

SEASON : March to June.

HAAS. (*Fall Queen.*)

An old variety which was at one time popular in the colder parts of the Ontario apple belt because of the hardness of the tree, but which has now given place to the Wealthy.

ORIGIN : St. Louis, Missouri.

TREE : vigorous ; habit upright ; an early and an annual bearer, hardy.

FRUIT : size medium ; form oblate conical ; skin thick ; color yellow, marbled, splashed and striped with crimson, with a few obscure white dots ; stem short set in a broad cavity of moderate depth, slightly russeted ; calyx half closed in an irregular, wrinkled basin.

FLESH : white, often stained with red next the skin ; texture peculiar, quince like, juicy ; flavor subacid, slightly astringent.

QUALITY : dessert poor ; cooking fair.

VALUE : market second class.

SEASON : late autumn.

HIBERNAL.



HIBERNAL. (After S. B. Green).

An attractive looking cooking apple, valuable also for hardness of tree: one of the best of the Russian apples for our colder districts.

ORIGIN: Russia.

TREE: vigorous, of strong spreading habit; healthy; productive.

FRUIT: size large; form roundish oblate conical; skin yellowish, striped and splashed with red, with small white dots; stem medium length set in a moderately deep regular cavity with large patch of russet; calyx half open in a narrow shallow wrinkled cavity.

FLESH: color yellowish; texture, tender, crisp, juicy; flavor astringent acid.

QUALITY: dessert poor; cooking good.

VALUE: home market in the north, first class.

SEASON: September to November.



SECTION OF HIBERNAL.

HUBBARDSTON. (*Hubbardston's Nonsuch.*)

HUBBARDSTON.

A first-class commercial apple for early winter. It succeeds well in the Province of Ontario, and deserves to be planted much more freely.

ORIGIN :
Hubbardston,
Mass.

TREE : hardy, vigorous, but somewhat subject to apple canker and therefore better top worked on some healthy grower; very productive; an early bearer.

FRUIT : size, medium to large; form round ovate, fairly regular; skin,

rich yellow ground nearly covered with stripes and splashes of light rich red; stem three-quarters of an inch long, set in a narrow deep russeted cavity; calyx open in ribbed basin.

FLESH : texture tender and juicy; flavor subacid, rich, sweet and excellent.

QUALITY : very good.

VALUE : market first class.

SEASON : October to February.

ADAPTATION : reported successful in the Counties of Simcoe, Prince Edward and Norfolk, but succeeds in all the best apple districts.



SECTION OF HUBBARDSTON.

HYSLOP.

A well known and widely cultivated variety of hybrid crab. Its dark, rich, red color and its late season make it a valuable variety.

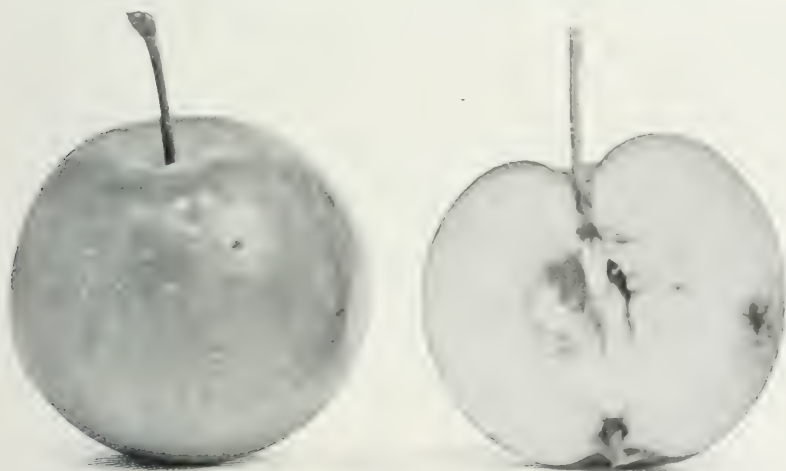
TREE : vigorous, of spreading habit.

FRUIT : size medium ; form roundish ovate, obscurely angular ; color a dark rich red, covered with heavy blue bloom, and having many obscure yellowish dots ; stem about one inch and an eighth in length, set in an obtuse, regular cavity.

FLESH : yellowish, acid.

VALUE : very good for culinary uses and for cider.

SEASON : September and October.



HYSLOP.

JONATHAN.

A first class winter dessert apple, of the Spitzenburg type, valuable for the home garden but too small to be planted for market ; succeeds well in some locations.

ORIGIN : Woodstock, New York State.

TREE : of moderate vigor ; shoots slender, drooping ; should be top worked on a vigorous trunk ; inclined to be self sterile, and needs to be planted with other varieties for proper pollination.

FRUIT : size medium, in some localities small ; form longish, truncated conical, regular ; skin colored dark brilliant red in sun, and striped, splashed with lighter red, with numerous small whitish dots ; stem long slender set in a deep acute cavity ; calyx small, closed, in a wide, deep, abrupt basin.

FLESH : color white ; texture tender and juicy ; flavor subacid, spicy, aromatic, excellent.

QUALITY : dessert best ; cooking good.

VALUE : special markets first class ; export second class.

SEASON : November to February.

4 E. O.

KING. (*King of Tompkins' County.*)

Said to have originated in New Jersey. On account of its excellent quality for cooking, its peculiarly rich aromatic flavor, its beautiful appearance and large size, this apple is taking the highest place in the great apple markets of the world. Unfortunately the tree is a poor bearer, and consequently unprofitable as an orchard variety, unless under exceptional circumstances. Top-grafted on Tolman Sweet, it is said to be more productive. For home use it is excelled by no apple.



TREE: a vigorous grower, of spreading habit, but not long-lived.

FRUIT: large, roundish, uneven; skin yellowish, shading off from red to dark crimson; stem short and stout, inserted in a wide, deep, somewhat irregular cavity; calyx closed in a broad, shallow, slightly corrugated basin.

FLESH: yellowish white, crisp and juicy, moderately firm; flavor rich, agreeable, aromatic.

QUALITY: Dessert and cooking, very good.

KING.

VALUE: home market first class; export first class.

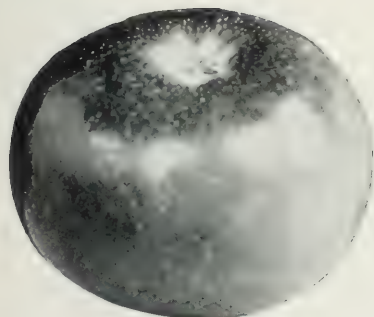
SEASON: October to February in Southern Ontario; reported at the Simcoe station October to March for Northern Ontario.

ADAPTATION: not hardy at Simcoe station unless top grafted on Tolman Sweet, or some



SECTION OF KING.

other hardy stock, and, therefore, it is not recommended for general planting in northern sections.



LADY.

LADY.

A beautiful little apple for the amateur's collection, and very highly valued where known for a dessert apple, having a pleasant flavor and great beauty. In Europe the apple is known as *Api*, but in America it has become known as the Lady apple. Some say it was so called because from its small size and beautiful color, it seemed just suited to a lady's mouth.

ORIGIN : France.

TREE : upright habit and bears fruit in clusters, vigorous only fairly hardy and productive.

FRUIT : very small, flat oblate. Color green, turning to yellow, half covered with a rich red cheek, and many tiny dots which are more numerous towards the apex. Stem slender, half an inch long, set in a deep regular cavity. Calyx closed in a small wrinkled basin.

FLESH : greenish white ; texture fine grained, crisp and juicy ; flavor pleasant.

QUALITY : dessert, best ; cooking too small to be of any value.

SEASON : December to May.

ADAPTATION : successfully grown as far north as the Bay of Quinte station.



SECTION OF LADY.

LA VICTOIRE.

This variety has not, so far, proved very productive, but is a handsome apple, and on account of its season and hardiness will probably prove useful in the north.

ORIGIN : near Grenville, Que. Probably a seeding of *Fameuse*.

TREE : hardy and a strong moderately spreading grower.

FRUIT : above medium size, oblate, regular ; skin greenish yellow, almost covered with crimson : dots fairly numerous, gray, distinct : cavity of medium depth and width, slightly russeted ; stem short and stout : basin of medium depth and width, almost smooth ; calyx open and medium in size.

FLESH : white, tinged with red, rather coarse, moderately juicy, mildly subacid, with a pleasant flavor ; core small.

QUALITY : good.

SEASON : Midwinter. (*Macoun*).

LIVLAND RASPBERRY (*Lowland Raspberry*).

A handsome hardy summer apple of very good dessert quality, one of the best summer apples for home use, but drops rather badly and ripens unevenly.

ORIGIN : Russia.

TREE : moderately upright, vigorous, moderately productive.

FRUIT : medium to large, roundish to oblate, conic, angular, color pale yellow, more or less marked, splashed and washed with bright red with a few pale yellow indistinct dots ; stem short to medium, moderately stout in a narrow cavity of medium depth ; basin shallow, narrow, slightly wrinkled.

FLESH : white tinged with red, crisp, tender, juicy, subacid with a good flavor.

QUALITY : dessert very good.

SEASON : middle to last of August.

ADAPTATION : quite hardy, having been fruited in Southern Manitoba. (*Macoun*).

LOUISE. (*Princess Louise, Woolverton*.)

An apple of great value for the home garden as a choice dessert variety, but probably not sufficiently productive to be profitable in the commercial orchard.

ORIGIN : at Maplehurst, near Grimsby ; a chance seedling of the Snow and first known as Woolverton. Samples were first exhibited by Mr. L. Woolverton at a meeting of the Ontario Fruit Growers' Association at Hamilton, where it was given the name Princess Louise, after Her Royal Highness, wife of the then Governor-General, His Excellency the Marquis of Lorne.

TREE : of slender habit ; fairly vigorous ; hardy ; moderately productive.

FRUIT : roundish, size medium ; skin greenish yellow, of bright waxy lustre, with cheek of clear bright carmine ; stem stout, three quarters of an inch long, in a narrow, moderately deep cavity ; calyx half open, in a broad, shallow, slightly plaited basin.

FLESH : pure white ; texture tender, fine, somewhat crisp, juicy with rich aromatic flavor.

QUALITY : dessert best ; cooking fair.

VALUE : home market, first class.

SEASON : November to February.

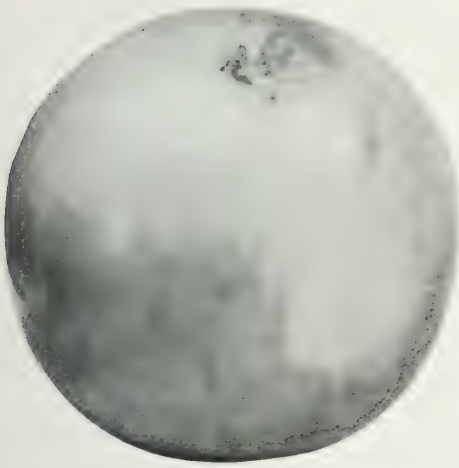
LONGFIELD.

A late fall variety, valued chiefly for its hardness : too small to be profitable where better kinds will succeed.

ORIGIN : RUSSIA.

TREE : a poor straggling grower ; very hardy ; very productive, inclined to overbear and requires thinning ; an early bearer.

FRUIT : size small ; form roundish conical ; skin yellow, with bright red cheek, and a few large yellowish dots ; smooth ; tender, showing bruises quickly ; stem short, set in a deep regular cavity ; calyx half open in an abrupt, wrinkled basin.



LONGFIELD.



SECTION OF LONGFIELD.

FLESH : very white ; texture very tender, juicy ; flavor pleasant, subacid.

QUALITY : dessert fair ; cooking good.

VALUE : market third class.

SEASON : October and November.

McINTOSH. (*McIntosh Red*).

A very fine dessert apple for early winter use. At Ottawa and along the St. Lawrence and other places where conditions are favorable, it is counted one of the best dessert apples of its season, adapted and profitable for export, but in the Niagara District it is not so much grown, owing to scab.

ORIGIN: with John McIntosh, Dundela, Ont., in whose orchard the original tree is still standing (1904).

TREE: hardy, vigorous; fairly upright; fairly productive; an annual bearer; of Fameuse type; inclined to drop its fruit last of September in Niagara District.

FRUIT: size medium to large; form roundish; color, deep crimson in sun, light crimson on shady side, inclined to show broken stripes and yellow dots, often with a heavy blue bloom; stem one inch in length, stout, set in a wide, and often somewhat irregular cavity, which is green at bottom; calyx closed in a smooth, regular, rather shallow basin. Cuts given on this page show fruit considerably reduced in size..



McINTOSH RED.



SECTION OF McINTOSH RED.

FLESH: snow white; texture crisp, tender, very juicy; flavor slightly subacid, aromatic, perfumed near the skin.

QUALITY: dessert first class.

VALUE: home market first class.

SEASON: November to January; quite ready for eating by November first.

ADAPTATION: Northern apple districts; succeeds at Trenton and St. Lawrence stations.

McMAHON. (*McMahon White*).

A good sized and rather attractive fall apple, valuable especially for the hardiness of the tree; succeeds well at the Central Experimental Farm, Ottawa; too tender in flesh to ship well.

ORIGIN: from seed of Alexander, planted about 1860 by A. L. Hatch, Ithaca, Wisconsin.

TREE: very hardy; very strong grower; productive.

FRUIT: size large, uniform; form roundish oblate, slightly conical, obscurely ribbed; skin light yellow, becoming white at full maturity, often with blush of red and large white dots; stem short, about half an inch long, stout, in an acute, deep, russeted cavity; calyx half open in a narrow, moderately deep, slightly wrinkled basin.

FLESH: color white; texture coarse grained, tender, juicy; flavor subacid.

QUALITY: dessert fair; cooking very good.

VALUE: home market first class; export third class.

SEASON: October to December.

MAIDEN BLUSH.

A valuable apple for the amateur because of its extreme beauty, but not considered a very profitable market variety by Ontario fruit growers.

ORIGIN: New Jersey.

TREE; moderately vigorous grower, and fairly productive.

FRUIT: size medium to large; form oblate, very regular, but slightly one-sided; color lemon yellow with beautiful crimson blush; stem three quarters of an inch long, set in a moderately deep, wide cavity; calyx closed, in a shallow, slightly wrinkled basin.

FLESH: color white; texture fine, tender; flavor pleasant; subacid.

QUALITY: dessert, fair; cooking, good.

SEASON: September and October.

MARTHA

A hybrid crab.

ORIGIN: by Peter M. Gideon. Excelsior, Minnesota.

FRUIT: large, oblate, very regular: surface smooth, yellow, almost entirely covered with a beautiful bright red, with a bluish bloom, no stripes or splashes: dots white, conspicuous; cavity wide, regular: stem long: basin very wide, nearly flat: segments often nearly obsolete core closed.



SECTION OF MARTHA.



MARTHA.

FLESH: yellowish white, acid; good for culinary use.

SEASON: early to mid September.

MANN

The Mann apple is not very highly recommended for extended orchard planting in Ontario, because of its rather unattractive green color in shipping season. The tree has the merit of being a productive variety and an early bearer, but the fruit is inclined to drop early, and to be small, when not thinned.



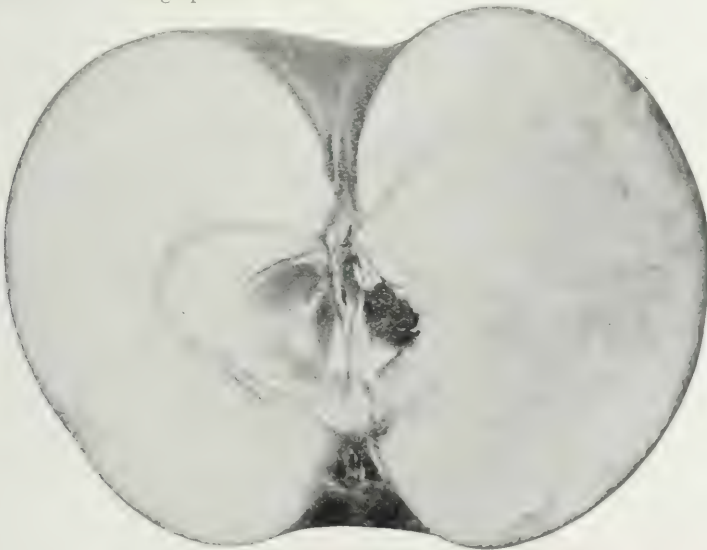
MANN.

ity, nearly covered with light green dots; stalk half an inch long in a large slightly russeted cavity; calyx closed in a large plaited basin.

ORIGIN : New York State, a chance seedling introduced by Dr. Mann, after whom it was named by the Western New York Horticultural Society.

TREE : hardy, moderately vigorous, spreading, with slender branches; an early and regular bearer, inclined to overload.

FRUIT : of large size when thinned and well cultivated, form roundish, oblate, regular; skin dull green, yellowing at matur-



SECTION OF MANN.

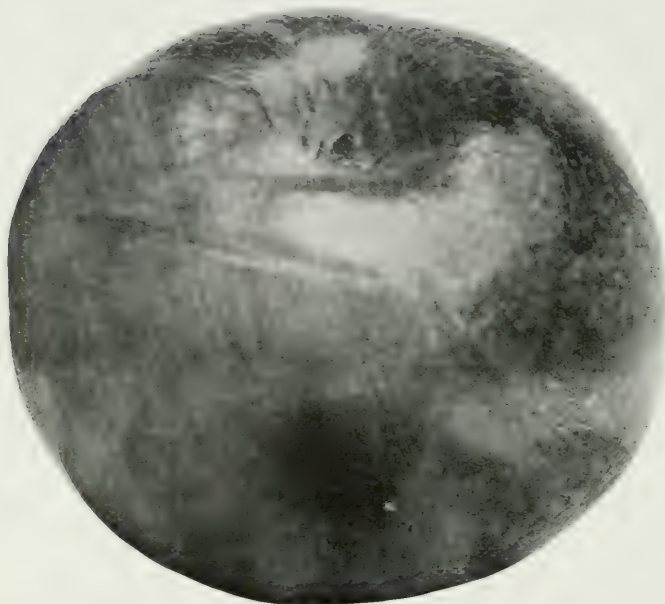
FLESH : yellowish, moderately firm, juicy, agreeable, subacid.

QUALITY : dessert poor; cooking good.

VALUE : first class for home or foreign market, but the best prices are not always obtained for the fruit, owing to its unattractive color.

SEASON : January to April.

MILWAUKEE.



MILWAUKEE.

One of the best hardy winter apples for the commercial orchards in the northern belt of apple culture in Ontario; tested several years at our St. Lawrence station, and reported as one of the most promising winter apples for profit yet tested for that district: a fairly good shipper.

ORIGIN: a seedling of Duchess, by Geo. Jeffrey, Milwaukee, Wisconsin.

TREE: growth moderately vigorous; habit spreading; very hardy; very productive; an early bearer; foliage dark green, abundant; shows characteristics of the Duchess.

FRUIT: large, form oblate, flattened, slightly angular; skin yellowish green blushed and streaked with bright red and crimson on the sunny side; stem slender, one-half inch long in a large deep, often russeted cavity; calyx half closed in a wide deep wrinkled basin.

FLESH: color yellowish white; texture tender, crisp, juicy; flavor acid.

QUALITY: dessert fair; cooking very good.

VALUE: for near markets first class.

SEASON: December to March.



SECTION OF MILWAUKEE.

NEWTOWN PIPPIN.

(*Green Newtown Pippin, Yellow Newton Pippin, Albemarle.*)

The highest priced apple that reaches the English market, but not much grown in Ontario because the fruit is subject to the apple scab.

ORIGIN : Newtown, Long Island.

TREE : a slow grower and only moderately hardy ; needs rich soil and good cultivation.

FRUIT : medium to large ; form, roundish oblique, with broad obscure ribs terminating in five crowns at the apex ; color, dull green, becoming yellowish during the winter, with reddish brown tinge on the sunny side, and dotted with small grey russety dots ; stalk, three-quarters of an inch long, inserted all its length in a deep, wide, funnel-shaped cavity ; calyx small closed in a small, moderately deep basin.

FLESH : greenish-white ; texture firm, crisp, juicy ; flavor, rich and highly aromatic.

VALUE : home markets, first class ; foreign market, first class.

QUALITY : cooking, first class ; dessert, first-class.

SEASON : January to May, at its best in March.

ADAPTATION : only to certain favored sections.

NORTH STAR. (*Dudley Winter.*)

Originated in Maine. Fruit roundish ; size above medium to large ; cavity, open, deep, slightly russeted ; stem medium length, slender ; basin deep, medium width, slightly wrinkled ; calyx partly open ; color pale yellow ; streaked and splashed with deep lively red ; dots few, small, pale yellow, indistinct ; skin moderately thick, tender ; flesh yellow, rather coarse, tender, moderately juicy ; core small ; subacid, pleasant flavor ; quality above medium, almost good ; season late September to early winter. Tree vigorous and productive. A handsome apple, about the same season as Wealthy. This variety is succeeding well in some of the colder parts of the country. (*Macoun.*)

NORTHWESTERN GREENING.

One of the best winter commercial apples, especially for colder sections : attractive in appearance.

ORIGIN : Wisconsin ; introduced in 1872 by E. W. Daniels.

TREE : productive, but long in coming into bearing ; hardy, in Minnesota reckoned to be of the second degree of hardness, or in the same class as the Wealthy.

FRUIT : size large to very large ; form roundish, slightly conical ; color green, becoming yellowish, with small white dots ; stem about half an inch long in a regular funnel-shaped cavity of moderate depth ; calyx closed, in a regular, very slightly wrinkled basin.

FLESH : color greenish white ; texture fine-grained, firm, juicy ; flavor sprightly, subacid, pleasant.

QUALITY : dessert, good ; cooking, good.

VALUE : home market first class.

SEASON : winter.

ONTARIO.



ONTARIO.

FRUIT: large, oblate, slightly ribbed, sides unequal; skin yellowish, nearly covered with bright red, with a few scattered small white dots with blush bloom; stem seven-eighths of an inch long, in a deep, russeted uneven cavity; calyx closed in a moderately deep, corrugated basin.

FLESH: white with green tint, yellowing slightly as it ripens; texture fine grained, tender, juicy: flavor mild, subacid, sprightly, aromatic.

QUALITY: very good for all purposes.

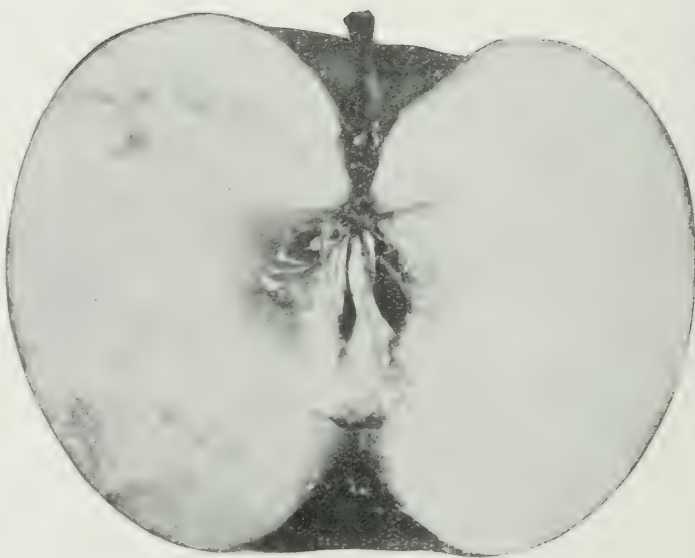
SEASON: November to April.

ADAPTATION: Southern Ontario to north shore of Lake Ontario and other good apple districts.

This is a native of Ontario, as its name indicates. It was originated by the late Charles Arnold of Paris, Ontario, by crossing Wagener and Spy. Its early and abundant bearing, the good quality and even size of the fruit, are points in its favor as an export variety. It has been tested in a commercial way for some years at our Bay of Quinte station, where it is counted profitable.

ORIGIN: Paris, Ontario.

TREE: fairly hardy, moderately vigorous, somewhat spreading; very productive; an early bearer.



SECTION OF ONTARIO.

ORANGE.

A fairly good dessert variety of hybrid crab.

ORIGIN : United States.

TREE : a slow grower, productive.

FRUIT : size medium ; form round, slightly flattened at the ends ; color light orange, with minute white dots and russet veins ; stem slender, one and a quarter inches in length set in a deep open cavity ; calyx closed, in a furrowed basin.

FLESH : color yellowish, yellow veinings ; texture a little dry ; flavor mild, pleasant, acid

SEASON : September,

PATTEN. (*Patten Greening.*)

ORIGIN : Iowa.

TREE : hardy ; moderately vigorous ; very productive.

FRUIT : large oblate ; cavity deep, medium width, russeted ; stem short ; basin deep, medium width ; calyx open, large ; skin pale yellow with traces of pale green, with a pink blush ; dots moderately numerous, pale green, distinct ; bloom, slight ; skin, moderately thick.

FLESH : yellow, moderately juicy, tender, coarse ; core, small ; subacid ; pleasant flavor

QUALITY : above medium.

SEASON : October to mid-November. Hardier than Wealthy and useful where that variety will not succeed. (*Macoun.*)

PHOENIX.

A fairly profitable commercial apple in some parts. It is grown in Northumberland county and in other apple sections in the Province, and by some growers is ranked equal to the Baldwin for profit.

ORIGIN : Illinois.

TREE : healthy and productive.

FRUIT : medium to large ; roundish, sometimes quite one-sided ; color greenish yellow ground well covered with deep red, obscurely striped with a darker shade, and having a few small grey dots ; russeted about the cavity and green about the basin ; stem one half an inch long in a funnel shaped cavity ; calyx half closed.

FLESH : creamy-white, coarse grained, somewhat juicy ; flavor mild, acid, pleasant.

QUALITY : dessert, poor, cooking, good.

VALUE : first class for export, if shipped early.

SEASON : December to February.

PORTER.

"Fruit above medium, oblong ovate, conical, regular, often ribbed at apex ; bright yellow, sometimes a dull blush in the sun ; stalk one inch long, slender, cavity rather small ; basin narrow ; flesh tender, rich, rather acid, of fine flavor. Fair and productive. Early autumn. (*American Fruit Culturist.*)

PEWAUKEE.



PEWAUKEE.

A good commercial apple for the northern limits of the Ontario apple belt where Spy and Baldwin are tender; but not as hardy as was at first supposed. It is not gaining in popularity.

ORIGIN : seed of Oldenburg crossed with Northern Spy, raised by G. P. Peffer, Pewaukee, Wisconsin.

TREE : hardy, but not equal in this respect to Wealthy ; vigorous ; habit-round topped with upright centre ; an annual bearer.

FRUIT : size large ; form roundish oblate, irregular, unequal ; color yellow striped and splashed with red ; dots whitish ; bloom grayish ;

stem short, half an inch, sometimes fleshy at point of insertion, set in small shallow often flat cavity, sometimes lipped ; calyx half open, large, in a small shallow, corrugated basin.

FLESH : color yellowish ; white with yellow veinings ; texture firm, rather coarse, juicy ; flavor fair, subacid

QUALITY : dessert fair ; cooking good.

VALUE : home or foreign market first class.

SEASON : December to March.



SECTION OF PEWAUKEE.

PRIMATE.



SECTION OF PRIMATE.

A fine dessert apple for the home garden : too tender for distant shipment.

ORIGIN : uncertain probably Western New York.

TREE : hardy, very vigorous, symmetrical, very productive.

FRUIT : medium to above medium ; form oblate conical ; skin light yellow, with crimson blush on sunny side ; stem about one inch long inserted in a large deep furrowed cavity ; Calyx closed in an abrupt, moderately deep, somewhat corrugated basin.

FLESH : color white ; texture tender, juicy, with a very pleasant, subacid flavor.

QUALITY : dessert very good ; cooking good.

VALUE : home market first class ; foreign market second class.

SEASON : August and September.

ADAPTATION : succeeds in best apple districts.



PRIMATE.

RIBSTON (*Ribston Pippin*).

A highly esteemed English apple, largely planted in Ontario previous to 1860, but of late not so popular in commercial orchards.

ORIGIN : Ribston Hall, near Knaresborough, England.

TREE : moderately vigorous ; fairly healthy ; not hardy at the north ; very productive ; an early bearer.

FRUIT : size above medium ; form roundish, slightly conical ; skin rough ; color russet yellow with stripes of red and often a red shade on sunny side ; stem short set in a wide often somewhat russeted cavity ; calyx small, closed in a narrow angular, ribbed basin.

FLESH : yellow ; texture crisp, firm, granular, juicy ; flavor rich, aromatic, subacid.

QUALITY : dessert good ; cooking very good.

VALUE : home market first class.

SEASON : November and December ; keeps till January in a cool cellar.

ADAPTATION : succeeds in best apple districts, although it is somewhat hardier than Baldwin or Greening.

ROXBURY (*Boston Russet*, *Roxbury Russet*).

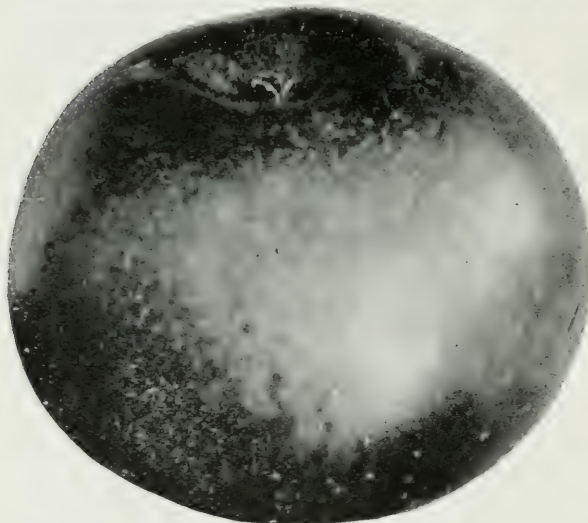
One of the staple export varieties in many parts of Southern Ontario, because of its long keeping qualities. It resists scab well, but is subject to the codling moth, unless well sprayed, and is inclined to drop early from the trees, resembling the Greening in this respect.

ORIGIN : Massachusetts.

TREE : fairly vigorous, spreading like Greening, but flatter in form of top.

FRUIT : medium to above medium, roundish, oblate, sides not equal ; skin tough, green, nearly covered with russet, and having a brownish red cheek when fully exposed to the sun ; stem half to three-quarters of an inch long in a medium sized, regular cavity ; calyx closed in a round medium sized basin. Cuts show fruit less than normal size.

FLESH : yellowish white ; texture almost coarse grained, moderately juicy ; flavor mild, subacid pleasant.



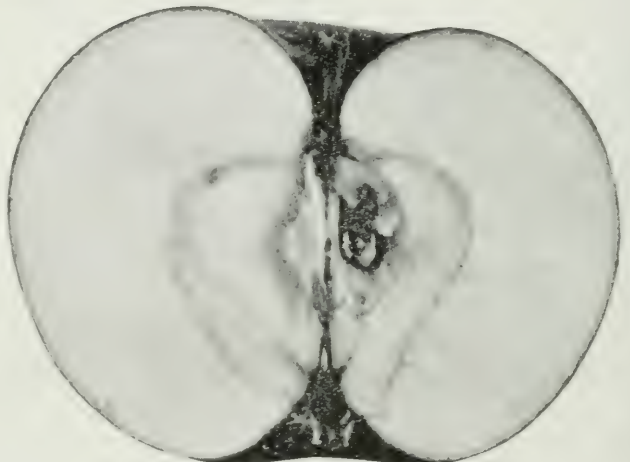
ROXBURY RUSSET.

QUALITY : dessert, fair ; cooking, good.

VALUE : home and foreign markets good.

SEASON : January to June.

ADAPTATION : long tested in the Niagara district and found to be well adapted to it. As hardy as the Greening, and succeeds in the best apple districts.



SECTION OF ROXBURY RUSSET.



ST. LAWRENCE.

roundish oblate; color of skin yellowish, with distinct stripes and splashes of carmine: dots obscure; stem five-eighths of an inch long, inserted in a large, deep, regular cavity: calyx closed in a small deep basin.

FLESH: color white, slightly stained; texture crisp, tender, juicy; flavor vinous, slightly acid.

QUALITY: dessert good; cooking good.

VALUE: home market, first class; foreign market, second class.

SEASON: September and October.

ADAPTATION: hardy generally over the province, except the extreme north.

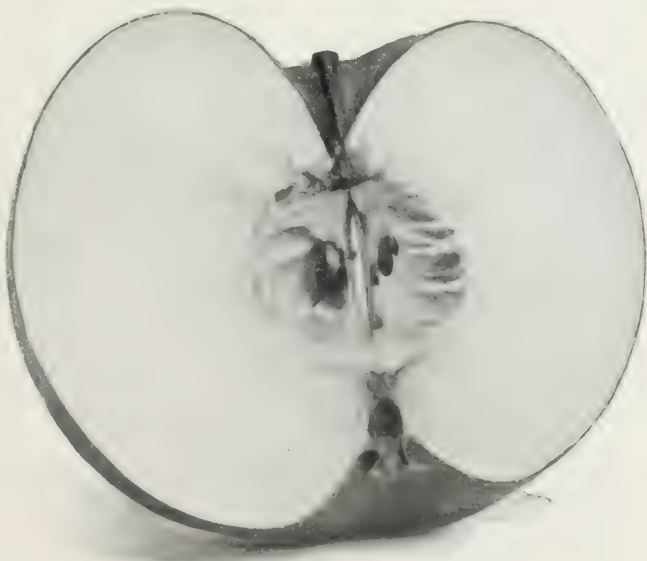
ST. LAWRENCE.

The St. Lawrence apple is not now planted in the "commercial" orchard of Ontario, bordering on Lakes Ontario, Erie or Huron, being inferior to other autumn varieties of its season, but it is valued in orchards along the St. Lawrence river, and in parts of the province between latitudes 45 and 46. It is rather subject to scab and codling moth.

ORIGIN: Montreal, Canada.

TREE: hardy, vigorous and productive.

FRUIT: large; form,



ST. LAWRENCE.

SCARLET PIPPIN.

A fancy dessert apple which is esteemed profitable to grow for market along the River St. Lawrence.

ORIGIN: near Brockville in Leeds County. A chance seedling.

TREE: upright in habit; hardy; vigorous and very productive; inclined to over-bear.

FRUIT: roundish oblate; skin, waxy white, streaked; splashed or almost entirely covered with bright scarlet covering; stem stout, one-half to three-quarters of an inch long in a narrow, moderately deep cavity; calyx closed in a narrow, very shallow basin.



SCARLET PIPPIN.



SECTION OF SCARLET PIPPIN.

FLESH: pure white; texture tender, fine, crisp, breaking, juicy, with a subacid flavor.

QUALITY: dessert, best; cooking, good.

VALUE: special market, first class.

SEASON: October to February; at its best in October and November.

SALOME.

A new Western apple which promises to be of some value in the Province of Ontario. The hardness of the tree, the clean bright color of the fruit and its long keeping quality seem to combine in its favor as a commercial variety, especially in the colder sections.

ORIGIN: E. C. Hathaway, Ottawa, Illinois.

TREE: hardy, productive, a slow grower, an early and an annual bearer.

FRUIT: size medium; form roundish, conical, somewhat angular or lopsided; color bright red with stripes of darker red and numerous small grey dots on a yellowish ground; when

5a F. O.

harvested the skin is green, but during the winter it takes on the coloring above described, making it very attractive; stem stout, three-quarters of an inch long, set in a deep, uneven cavity; calyx half closed, segments erect, in a moderately deep, slightly plaited basin, having five distinct prominences; core large, open, sessile.

FLESH: color yellowish; texture tender, firm, becoming toward spring moderately juicy; flavor pleasant, subacid.

QUALITY: dessert or cooking, fair to good.

VALUE: promising for export.

SEASON: November to March.

ADAPTATION: succeeds remarkably well in the County of Simcoe and at other favored points in the north.

SCOTT WINTER.



SCOTT WINTER.

In the province of Quebec this is considered the best late winter cooking apple, the tree being very hardy and the fruit a long keeper; useful for the northerly limits of apple culture.

ORIGIN: On the Scott farm, Newport, Vermont. Introduced by Dr. Hoskins, of Newport.

TREE: vigorous; habit upright; productive, an early bearer.

FRUIT: size small to medium; form roundish oblate, slightly conical; skin yellow, washed, striped and splashed with red; stem short set in a regular, deep, russeted cavity; calyx closed in a narrow abrupt, wavy basin.

FLESH: color yellow; texture fine grained, crisp, juicy; flavor pleasant, sprightly acid.

QUALITY: dessert fair; cooking good.

VALUE: fruit rather small, for market except under high cultivation.

SEASON: late winter.



SECTION OF SCOTT WINTER.

SEEK-NO-FURTHER (*Westfield*.)

An old commercial variety, at one time considerably planted in some parts of Ontario, and still highly valued by some apple growers. Not much planted in the newer orchards.

ORIGIN : near Westfield, Connecticut, U.S.A., about 1796.

TREE : vigorous ; habit spreading ; productive. Succeeds best on rich sandy loam.

FRUIT : size medium; form roundish conical ; skin greenish yellow shaded with dull red, striped with bright red, with russet veinings and a few large prominent yellow



SEEK-NO-FURTHER.



SECTION OF SEEK-NO-FURTHER.

dots ; stem short in a deep, slightly russeted cavity ; calyx usually open in a narrow, shallow leather cracked basin ; not subject to scab.

FLESH : yellowish white ; fine grained, tender : flavor spicy, pleasant, subacid.

QUALITY : dessert very good ; cooking fair.

VALUE : market first to second class.

SEASON : October to February.

SHIAWASSEE (*Shiawassee Beauty*.)

SHIAWASSEE BEAUTY.

A fine variety of the Fameuse type: much less subject to scab than Fameuse itself. A fancy variety for desert purposes.

ORIGIN: in Shiawassee County, Michigan, supposed to be a seedling of Fameuse.

TREE: hardy; vigorous; upright; productive alternate years.

FRUIT: size medium to large; form decidedly oblate; color yellowish ground, almost entirely covered with stripes, splashings and mottlings of dark crimson, and a few large prominent yellowish

dots; stem slender, three-quarters of an inch long, set in a broad deep cavity; calyx usually closed, in a large deep basin.

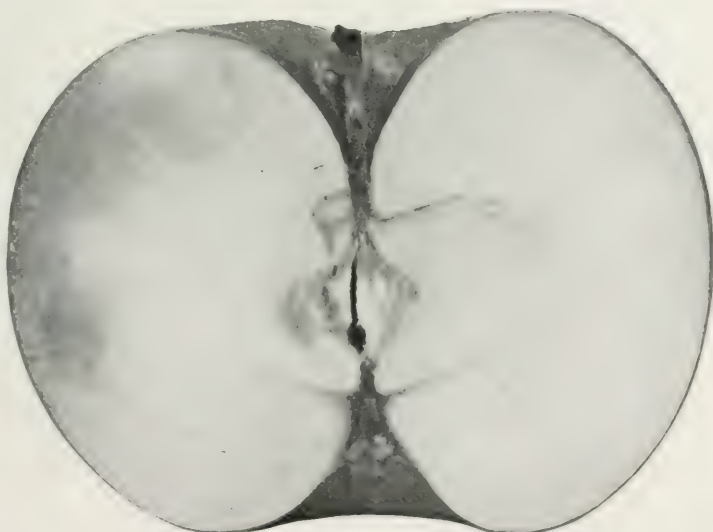
FLESH: color very white; texture firm, very crisp, juicy, fine grained; flavor excellent.

QUALITY: cooking fair; dessert very good.

VALUE: home or foreign market promising.

SEASON: October to January.

ADAPTATION: Can be grown wherever Fameuse succeeds.



SECTION OF SHIAWASSEE BEAUTY.

SPITZENBURG (*Esopus Spitzenburg*.)

One of the finest dessert apples for late winter use, and widely planted by early settlers throughout Southern Ontario. It has proved to be unprofitable as a commercial apple, because the tree is a weak grower, and yields small crops.



SPITZENBURGH.

ORIGIN: Esopus, on the Hudson river, previous to 1798.

TREE: lacking in vigor, often showing dead or feeble wood; upright, spreading, with drooping limbs when in bearing; fairly hardy.

FRUIT: size medium to large, oblong, slightly conical; skin straw color in shade, but usually nearly covered with bright red, and dark red in sun, with a few stripes, and many obscure gray dots; stalk seven-eighths of an inch long in a narrow deep cavity; calyx nearly closed, set in a narrow basin of medium depth, slightly corrugated.

FLESH: yellowish white; texture crisp, juicy, breaking; flavor brisk, rich, delicious.

QUALITY: first class for all purposes.

SEASON: November to February.



SECTION OF SPITZENBURG.

ADAPTATION: succeeds well on sandy loam in Southern Ontario.

SPY (*Northern Spy*).

The Spy stands in the very first rank of Canadian apples, whether for home or foreign markets. Originating in New York State on the line with the southern portion of the Province of

Ontario, it succeeds here to perfection. Its beauty of coloring, half shaded by its delicate bloom, and its great excellence of quality for all purposes, justly claim for it its wide popularity. In Chicago, Canadian Spys are more sought for than any other variety, but owing to tenderness of skin, which shows the slightest bruise, it is less popular for export to Great Britain than some other varieties. The tree is late in coming into bearing, often being fifteen years planted before yielding a crop, and this renders the variety somewhat unpopular with planters. Probably for fancy packages, selected Spys would be among the best.

ORIGIN: near Rochester, N.Y., introduced about 1850.

TREE: upright and spreading in habit; fruit spurs on interior boughs;

very vigorous, late in coming into bearing, but afterwards very productive in alternate years; blossoms late in spring and holds its fruit late in the autumn; requires high cultivation and good fertility.

FRUIT: large to very large; form roundish, slightly conical; skin thin, light green, or pale yellow, sprinkled with light pink, striped and shaded with pinkish red, and covered with thin whitish bloom; stalk slender, three-quarters of an inch long, in a wide, deep, sometimes russeted cavity; calyx small, closed, in a narrow, moderately deep, abrupt, irregular basin.

FLESH: white; texture fine grained, crisp, tender, juicy; flavor rich, sprightly, subacid, fragrant.

QUALITY: dessert and cooking, best.

VALUE: home market first class; skin a little tender for distant shipment unless handled with care and wrapped with paper.

SEASON: January to May.

ADAPTATION: sandy or clay loams in Southern and Middle Ontario: found tender at the St Lawrence Experiment Station, and also at the Lake Simcoe Station, except where top grafted to hardy stock.



SPY.



SECTION OF SPY.

STARK.



STARK.

The Stark has been tested in a commercial way in Ontario by many growers in the Bay of Quinte District, and is considered a good winter apple for export, being about as profitable as Ben Davis, and somewhat better in quality. Its dull red color is a serious fault.

ORIGIN: Ohio.

TREE: a stout vigorous grower, very productive each alternate year; foliage large, dark green, somewhat subject to fungus.

FRUIT: large form; roundish, slightly one-sided, somewhat oblong conical; skin covered with shades and splashes of light and dark red

on a greenish yellow ground, thickly sprinkled with brown dots; stalk one-half inch long, stout, in a small cavity of medium depth; calyx large, half-closed, in a large shallow, plaited basin; flesh yellowish white; texture a little coarse, firm and moderately juicy; flavor mild, sub-acid, good.

QUALITY: dessert poor; cooking good.

VALUE: home market second class; foreign market first class.

SEASON: January to May.



SECTION OF STARK.

STUMP.

An attractive looking fall apple, sometimes shown at our Provincial Fair : considered a fairly profitable variety.

ORIGIN : United States ; Thomas says in Monroe County, N. Y., while Downing supposes that it originated in the State of Delaware.

TREE : spreading, productive.

FRUIT : size medium ; form oblate conical ; color yellowish, splashed and blotched, with bright red ; stem stout, $\frac{3}{4}$ of an inch long, in a narrow, moderately deep, funnel-shaped cavity ; calyx half open, set in a deep wrinkled basin.

FLESH : color white ; texture crisp, juicy, firm ; flavor subacid.

QUALITY : fair for dessert ; good for cooking.

VALUE : home market first class ; foreign market second class.

SEASON : September and October.

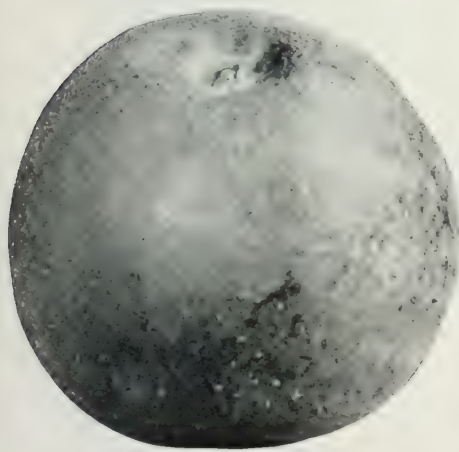
SWAYZIE. (*Swayzie Pomme Grise, Pomme Grise d'Or.*)

There is no choicer winter dessert apple for the months of December and January than the Swayzie Pomme Grise, especially when kept in a cool, dark cellar, so that its crisp texture and excellent flavor may be preserved. Unfortunately, it is not very productive, and, consequently, not profitable. One large tree at Maplehurst, seventy-five years planted, yielded only an average of four barrels each alternate year. It is well worthy of a place in the amateur collection.

ORIGIN : probably with Col. Swayzie, near Niagara.

TREE : upright, fairly vigorous and not very productive.

FRUIT : small, round, oblate conical ; color deep yellow, well colored with cinnamon russet



SWAYZIE.



SECTION OF SWAYZIE.

and many whitish dots ; stem three-quarters of an inch long, set in a deep cavity ; calyx closed in a moderately deep, slightly corrugated basin.

FLESH : white, texture fine grained, tender, crisp, juicy ; flavor aromatic, mild sub-acid pleasant.

QUALITY : dessert first class ; cooking third class.

VALUE : for home market second class ; for foreign market second-class.

SEASON : December to March.

ADAPTATION : succeeds in best apple districts.

SWEET BOUGH.

(Large Yellow Bough of Downing.)

SWEET BOUGH.

An excellent dessert apple, ripening about the same season as the Early Harvest; not subject to scab, and a favorite with those who prefer a sweet to a sour apple. Not profitable to grow for market, but it deserves a place in every collection for home use. Baked whole it is delicious eaten with cream.

ORIGIN: United States.

TREE: of medium vigor, never attaining a large size, and, therefore, even with a full crop, not very productive. Bears full every alternate year; head compact.

FRUIT: large, ovate, con-

cal: skin smooth, greenish yellow; stem one inch long, in a narrow, deep, regular cavity; calyx open, in a shallow, irregular basin.

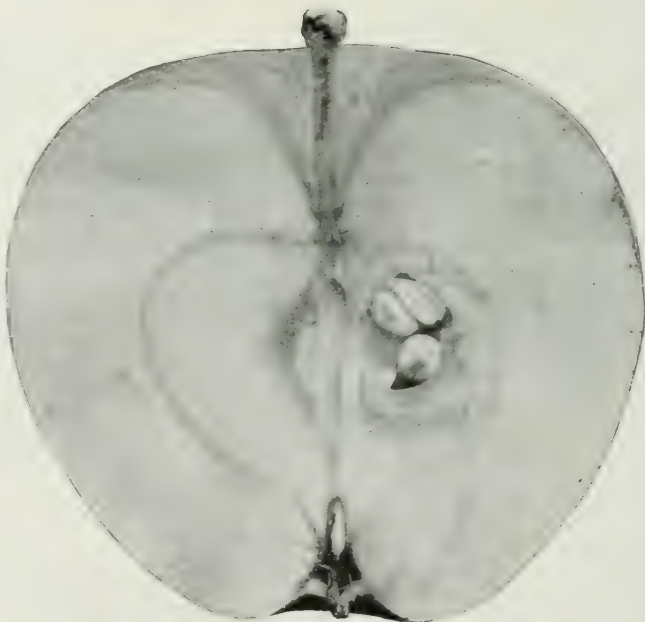
FLESH: white, fine grained, tender and juicy; flavor moderately sweet, rich and agreeable.

QUALITY: dessert very good; cooking poor, except for roasting.

VALUE: home market, second class; foreign market useless.

SEASON: late July to middle of August.

ADAPTATION: succeeds in best apple districts.



SECTION OF SWEET BOUGH.

TITOVKA (*Titus Apple.*)

A variety as yet little known or tested in Canada. In season it follows the Duchess. It is a favorite market apple in middle Russia and is found to endure the severest winters. At

Grimsby, grown as a top graft, it is inclined to drop its fruit about the middle of August, and almost before fully colored. Probably a fine variety for export in cold storage to succeed Duchess.

ORIGIN: Russia.

TREE: very hardy and productive.

FRUIT: large, oblong to roundish, often flattened at base and apex, somewhat irregular on sides; color yellowish green, almost covered with stripes and shadings of bright red, and light green dots; cavity narrow, deep and irregular; stem about three quarters of an inch long, stout; basin large, plaited at bottom; calyx nearly closed, segments recurved.

FLESH: white; texture firm, moderately juicy; flavor brisk, tart.

QUALITY: dessert poor; cooking good.

VALUE: home market first-class.

SEASON: August and September.

ADAPTATION: worthy of trial where Wealthy or Duchess succeed.



TOLMAN.

which may be grown farther north, when top grafted upon the Tolman than when upon common stock.

FRUIT: size medium; form roundish; color light yellow, sometimes with reddish cheek, and a line from stem to calyx; stem half an inch long, often inclined, inserted in a wide shallow cavity; calyx closed in a small shallow basin.

FLESH: color white; texture firm, fine grained; flavor sweet, rich.

QUALITY: dessert good; cooking fair.

VALUE: second class, except in special markets and in limited quantities.

SEASON: November to April.



SECTION OF TOLMAN.

TOLMAN.

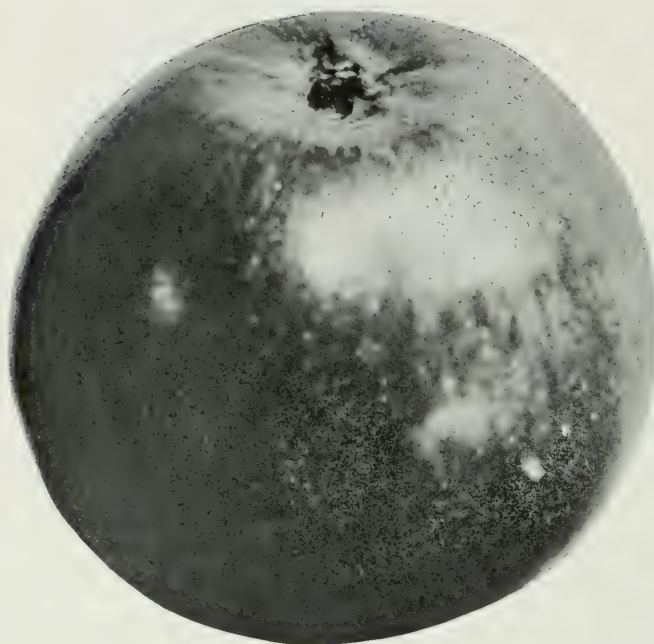
(*Tollman Sweet*.)

The best winter sweet apple; valuable for baking and by some people esteemed a good dessert apple; useful also as stock feed, in place of roots; not of much value for export.

ORIGIN: a native of Rhode Island.

TREE: a vigorous grower, very productive and very hardy; valuable as a stock upon which to top graft other and more tender varieties, as, for example, the King, which is more productive, and the Spy,

TRENTON.



TRENTON.

ORIGIN : seed of Golden Russet by Spy, raised by Mr. P. Dempsey, Albury, Prince Edward County.

TREE : vigorous ; spreading.

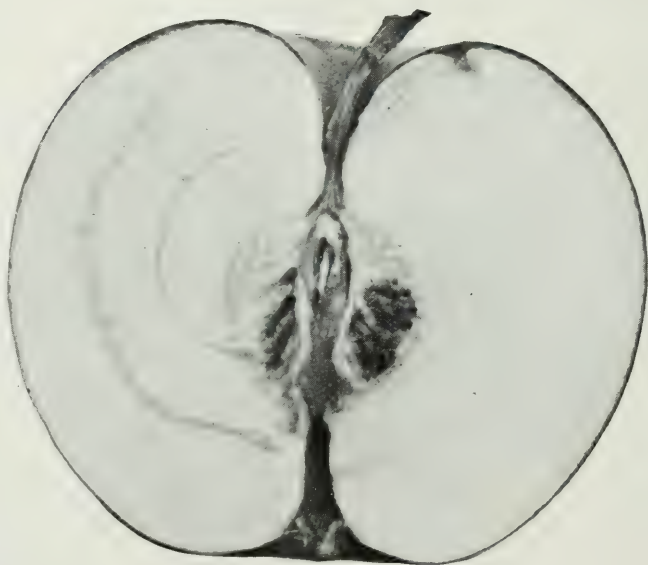
FRUIT : size medium ; color red on yellow ground, with numerous splashes and stripes of dark red and many white dots ; form round oblate ; stem five-eighths of an inch long in a deep cavity ; calyx partly open, in a deep basin.

FLESH : color yellow ; texture tender, crisp, juicy ; flavor pleasant, subacid.

QUALITY : dessert good.

VALUE : first class, though it has only been tested to a limited extent.

SEASON : September and October.



SECTION OF TRENTON.

TRANSCENDENT.

An excellent early autumn variety of the hybrid crabs.

ORIGIN : United States.

TREE : of moderate slender growth, hardy, somewhat subject to twig blight.

FRUIT : medium for its class ; form roundish oblong, flattened at ends, ribbed ; color of skin golden yellow, with crimson cheek and thin whitish bloom ; stem one and a quarter inches long, set in an open deep cavity ; calyx closed, segments large, set in a hollow slightly corrugated basin ; somewhat subject to scab.

FLESH : color yellowish ; texture crisp and moderately firm ; flavor acid, slightly astringent, becoming pleasant when fully ripe.

SEASON : August and September.



TRANSCENDENT.

VANDEVERE.

An old variety, originated at Wilmington, Delaware.

FRUIT : medium, oblate ; surface waxen yellow, striped with red ; dots numerous, green ; cavity deep ; stem about one inch long ; basin round, moderate ; calyx small, closed.

FLESH : yellowish, compact, but tender, with a fine rich subacid flavor ; good ; valuable for culinary use. October to January. (*Budd.*)

WALBRIDGE. (*Edgar Redstreak.*)

A good winter variety for northern sections, on account of the hardiness of the tree, but not commended for the apple orchards of the more favored districts.

ORIGIN : Edgar Co., Illinois, and first known as Edgar Redstreak.

TREE : vigorous ; habit spreading ; a tardy and often a shy bearer.

FRUIT : size medium ; form round conic ; skin pale yellow, shaded with pale red and having stripes and splashes of bright red on the sunny side, and a few obscure whitish dots ; stem short in an acute regular cavity ; calyx closed in a narrow flat basin.

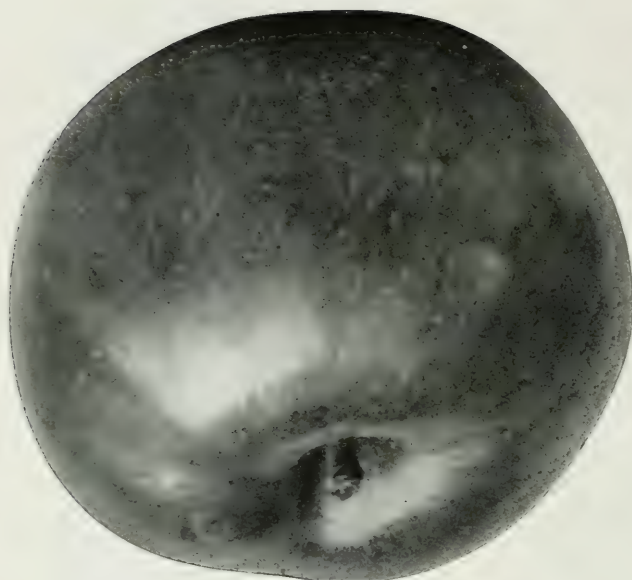
FLESH : color white ; texture tender, juicy ; flavor mild subacid.

QUALITY : dessert fair ; cooking good, but rather small.

VALUE : market second class.

SEASON : December to March.

WAGENER.



WAGENER.

A fine dessert apple when grown and highly colored, but samples grown in the shade are inferior both in appearance and in flavor. The texture of the fruit is too tender to be planted in the commercial orchard.

ORIGIN: Abram Wagener, Penn Yan, N. Y., in 1796.

TREE: a slow grower and an early bearer; not long lived.

FRUIT: medium to large, form oblate; color yellow, nearly covered with crimson, obscurely striped, with a few light dots; stem about seven-eighths of an inch long, inserted in a broad,

deep, irregular cavity; calyx closed, set in a funnel form, somewhat corrugated basin.

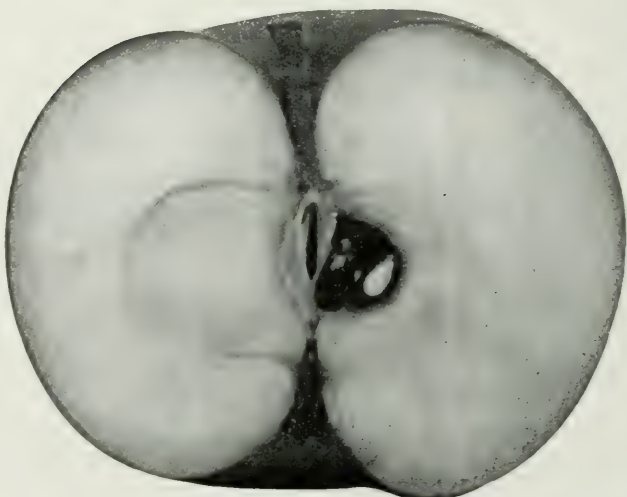
FLESH: yellowish, texture fine grained, very tender, juicy; flavor subacid, very agreeable.

QUALITY: dessert very good, cooking good.

VALUE: home market first class, foreign market second class.

SEASON: November to February.

ADAPTATION: succeeds in best apple sections.



SECTION OF WAGENER.

WEALTHY.

This beautiful apple was distributed among the members of the Ontario Fruit Growers' Association in 1882 for trial, and has won for itself a good reputation in every part of

Province as a dessert apple of excellent quality, while in the northern portions it is especially desirable on account of its hardness.

ORIGIN : St. Paul, Minnesota, by Peter Gideon.

TREE : vigorous, very hardy, over productive.

FRUIT : medium, roundish, oblate, regular ; skin, smooth, greenish ground, changing to pale yellow, rich, red cheek, with stripes and splashes of red in the sun, sometimes nearly covered with crimson ; stem one-half to three-quarters of an inch long in a deep, regular cavity ; calyx nearly closed in a deep, abrupt basin.

WEALTHY.

FLESH : white, texture fine grained, tender, juicy, sprightly, pleasant subacid.

QUALITY : dessert very good ; cooking good.

VALUE : for home market first class ; for foreign market first class.

SEASON : September to November.

ADAPTATION : succeeds throughout the Province generally.



SECTION OF WEALTHY.

WOLF RIVER.

The Wolf River is an apple that might be included in a list for export. It is a little later in season than Alexander, and is supplanting that variety in some sections.

ORIGIN : a seedling of the Alexander, and originated in Wisconsin on the bank of Wolf River.

TREE : very hardy, vigorous and fairly productive ; an early bearer.

FRUIT : very large, oblate, or roundish oblate, usually regular in size ; skin light yellow, shaded with dark red or crimson in sun, with a few yellowish dots ; stem three-quarters of an

inch long, set in a narrow deep basin, of a green or russet color; calyx open, in a narrow, deep, green wrinkled basin.

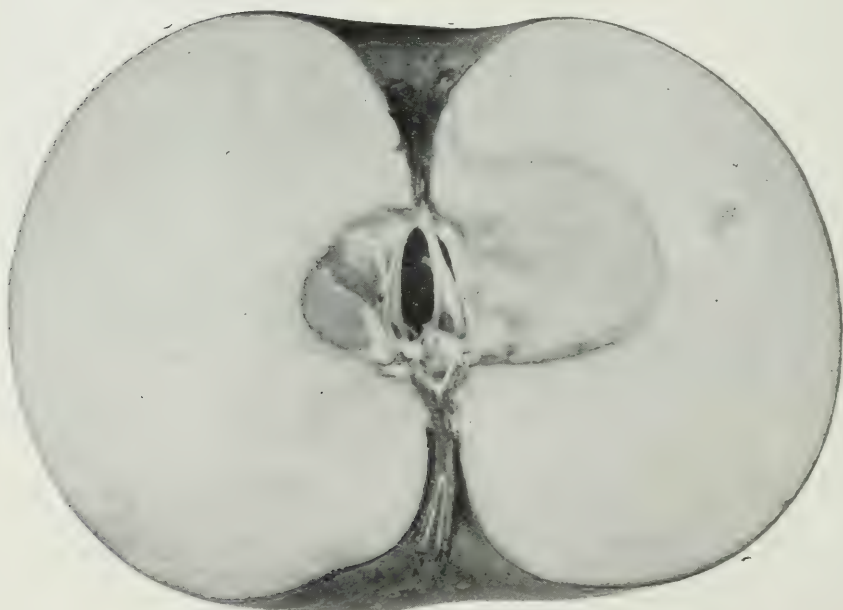
FLESH: yellowish white, moderately firm in texture, not fine-grained, juicy, with a pleasant subacid flavor.

SEASON: October and November.

ADAPTATION: general throughout the Province, but specially successful in the north.



WOLF RIVER.



SECTION OF WOLF RIVER.

WHITNEY.

(*Whitney No. 20*).

A hybrid crab, which originated in Illinois, and has proved itself valuable in Northern Illinois, in Minnesota, and in some parts of our Canadian North West. As long ago as 1894, this apple was in bearing at Prince Albert in Alberta, and the Board of Control of our Ontario Fruit Experiment stations is having it tested in several places in New Ontario.

The apple is large for its class ; it is a good cooking apple and a fair dessert apple.

TREE: productive ; very hardy.



Whitney.



Section of Whitney.

FRUIT: medium size ; form roundish conical, slightly angular ; color dark red, splashed with dark crimson on a yellow ground, with obscure small white dots ; stem one inch long set in a flat wrinkled basin ; calyx closed in a regular slightly russeted basin.

FLESH: color yellowish ; texture tender, juicy ; flavor subacid.

QUALITY: cooking very good ; dessert good.

VALUE: special market first class.

SEASON: August to September.

YELLOW BELLFLOWER. (*Bishop's Pippin of Nova Scotia.*)

YELLOW BELLFLOWER.

FRUIT: size large; form apparently oblong, because tapering towards calyx, somewhat angular and ribbed; color pale yellow, often with a beautiful blush on the sunny side and numerous obscure whitish dots; stem slender, one inch long, in a narrow deep cavity; calyx closed in a small corrugated basin.

FLESH: color yellow; texture tender, juicy and crisp; flavor sprightly subacid, agreeable when eaten in season.

QUALITY: dessert good; cooking good.

VALUE: home market first class.

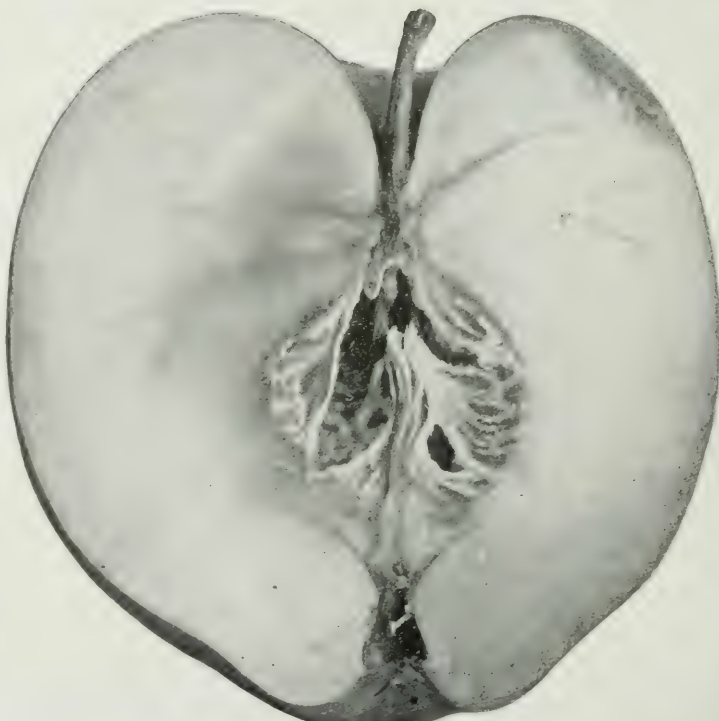
SEASON: December to February.

ADAPTATION: general, except in extreme northern sections.

At one time the Bellflower was planted to some extent in Ontario orchards, but the tree has proved itself irregular in its bearing habits, sometimes producing magnificent samples, and at other times small and poorly colored fruit, and the fruit is tender and shows very slight bruises, so that we cannot recommend it as worthy of a place among the most profitable varieties.

ORIGIN: Burlington, N. J.

TREE: vigorous, forming a roundish, spreading and somewhat drooping head; productive alternate years.



SECTION OF YELLOW BELLFLOWER.

YELLOW TRANSPARENT.



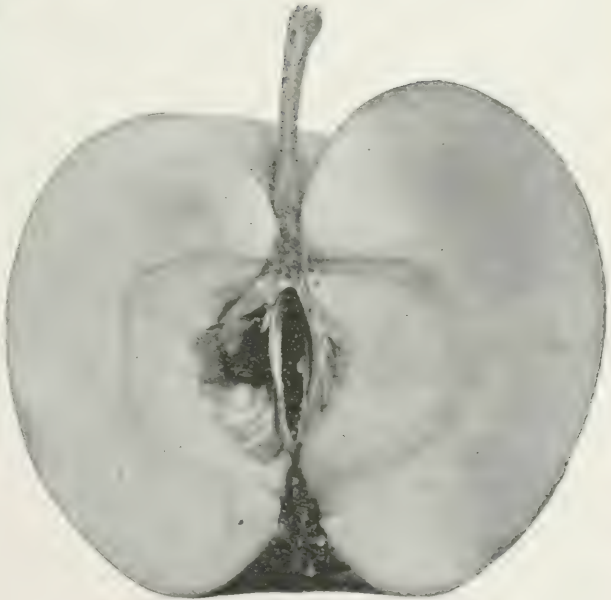
YELLOW TRANSPARENT.

FRUIT: above medium, roundish, oblate, inclined to be conical; skin clear white, yellowish white when very mature; dots light green, obscure; stalk medium, in large cavity; calyx closed in medium, slightly corrugated basin; fruit hangs well on the tree; cuts show fruit below normal size.

FLESH: white; texture firm till very ripe, then tender; quality second class.

SEASON: early August.

ADAPTATION: succeeds almost everywhere over the Province.



SECTION OF YELLOW TRANSPARENT.

YORK IMPERIAL.

A fine export market apple, highly valued in some of the American States, but not yet much grown in Ontario.

ORIGIN: York County, Pa.

TREE: a moderate grower, productive.

FRUIT: medium in size; angular, oblique; color of skin, bright red in shades, stripes and splashes on a yellowish ground; stem half an inch long in a deep funnel-shaped cavity; calyx nearly closed in an irregular deep, slightly plaited basin.

FLESH: yellowish; texture firm and juicy; flavor, subacid, good.

QUALITY: dessert fair; cooking good.

VALUE: first class for market.

SEASON: January to March.

THE CHERRY.

The cherry, which for a time was a comparatively neglected fruit in Ontario, is now being more largely planted and better culture is being given it. As a result, this delicious fruit is now being produced in fairly large quantities in certain sections, and as the crop is more uncertain than that of any of the other large fruits, the prices obtained for cherries are good.

There are three well recognized groups into which the cultivated cherries are divided, the Morello or Sour cherries, the Bigarreau, Heart, or Sweet cherries, and the Duke cherries, which are intermediate between the other two groups, the fruit being usually subacid. The hardiest varieties are found in the Morello group, and for this reason these Sour cherries have succeeded over a much larger part of Ontario than the others. The eastern limit of the commercial culture of the Sour cherries is about the city of Kingston, but north-east of that district along the St. Lawrence River, especially within twenty or thirty miles of the water, they succeed admirably. They are not grown to any extent north of latitude 45 degrees, as it has been found that the dry cold winters kill the fruit buds, and it is only rarely that a crop is produced. Near the northern limit of the successful culture of Sour cherries, it has been found that large bodies of water have a very beneficial influence in lessening the winter injury.

The Sweet and Duke cherries have a much narrower range than the Sour cherries. While they will succeed along Lake Ontario east of Toronto, where the influence of the water moderates the climate, the crops are too uncertain for their commercial culture, hence this is confined mainly to the south-western parts of the Province.

More care is required in choosing a site for cherries than for apples. A warm sandy loam or gravelly well-drained soil is to be preferred, and while the trees may succeed for a time on poorly drained cold soil, they will not reach a great age and are not likely to prove profitable. A site should if possible be chosen where there is the least danger from spring and summer frosts, as cherry blossoms are tender.

The preparation of the land for apple trees and directions for planting of the same may be followed for the cherry, but even more care should be taken in planting, as cherries are much harder to transplant than apples. For this reason one or two year old trees should be used, as the loss from planting older trees is liable to be great.

As the trees of the Morello cherries do not reach a great size, they may be planted closer than the others; from eighteen to twenty feet apart being sufficient; while for the Sweet cherries twenty-five feet is not too much. The Duke cherries, which do not grow quite so large as the Sweet, may be planted about twenty feet apart.

The pruning to shape the cherry tree is much the same as for the apple, but after the tree becomes well shaped the less pruning done the better. Often serious injury occurs when cherry trees are severely pruned. Gum oozing from the tree is an indication of such injury.

Thorough cultivation is as necessary for cherries as for apples, and cover crops are, if anything, more necessary.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Hardy: Orel 25, Orel 24, Richmond, Montmorency, Russian 207.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Niagara District: By Linus Woolverton, Grimsby, Ont.

Commercial: Wood, Knight, Napoleon, Tartarian, Dyehouse, Montmorency, Late Duke, Elkhorn, Windsor, Morello.

Domestic: May Duke, Cleveland, Knight, Elton, Tartarian, Hortense, Choisy, Eagle, Mezel, Royal Duke.

Lake Simcoe District: By G. C. Caston, Craighurst, Ont.

Commercial and Domestic: Orel 24, Ostheim, Litham, Russian 207, Bessarabian, Dyehouse, Morello.

Algoma District: By Charles Young, Richard's Landing, Ont.

Commercial and Domestic: Richmond, Montmorency, Morello.

Bay of Quinte District: By W. H. Dempsey, Trenton, Ont.

Commercial and Domestic: Richmond, Montmorency.

St. Lawrence District: By Harold Jones, Maitland, Ont.

Commercial and Domestic: Richmond, Montmorency, Orel 24, Morello.

DESCRIPTION OF VARIETIES.

CALIFORNIA ADVANCE.

A fine Duke cherry, so similar in both season and in character to the Late Duke, that we are inclined to think the two identical. Introduced by the Stark Nurseries of Louisiana, U.S.

CHOISY. (*Belle de Choisy, Ambree grosse of Le Roy.*)

The most delicious of all dessert cherries, and one that should be planted in every amateur's garden; but of no value in the commercial cherry orchard, because not productive, and the tree is often short lived.

ORIGIN: Choisy, near Paris, 1760.

TREE: upright; foliage dark; hardy; not very productive; group, Duke.

FRUIT: medium to large, $\frac{3}{4} \times \frac{3}{4}$, obtuse heart-shaped; skin transparent, showing the structure of the flesh and the cells of juice within; color bright cornelian red in sun, pale red to amber in shade; stem slender, two inches long; suture marked by a delicate line.

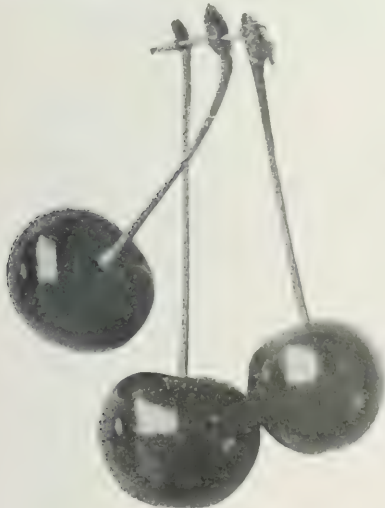
FLESH: very pale red; texture soft, juicy; flavor sweet, very delicious.

QUALITY: dessert very good.

VALUE: market second class.

SEASON: late June.

ADAPTATION: Southern Ontario.



CHOISY.

CLEVELAND.

One of the finest Bigarreau cherries for dessert purposes, being of high quality and not too firm in texture. A good variety for commercial orchards, because of its high color and earliness of season, but not yet fully tested in this Province.

ORIGIN : by Prof. Kirtland, Cleveland, Ohio.

TREE : vigorous ; of stout spreading habit ; productive, fruited after three years planting at Maplehurst ; group, Heart.

FRUIT : large, $\frac{3}{4}$ x $\frac{1}{2}$ of an inch ; form heart-shaped, sides unequal ; color bright red maroon, on yellowish ground, dark rich red in the sun ; stem stout, $1\frac{1}{2}$ inches long in a broad, uneven cavity ; suture broad, half way round.

FLESH : light cream in color ; texture almost tender, juicy ; flavor sweet, rich and delicious.

QUALITY : first-class for table.

VALUE : home market good ; distant market good.

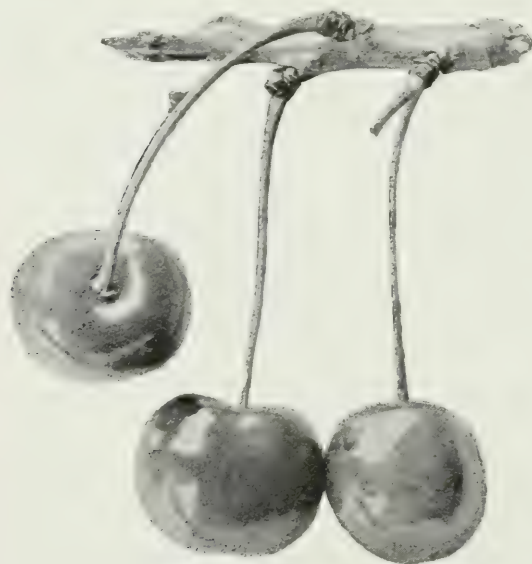
SEASON : late June.



CLEVELAND.

COE. (*Coe's Transparent*.)

A good variety for the home garden, but altogether too tender to be popular for the commercial orchard.



COE.

ORIGIN ; in Connecticut, with Curtis Coe, of Middleton.

TREE : healthy, fairly vigorous, with round spreading head, third rate in productiveness ; group, Heart.

FRUIT : medium to large ; round and regular in form ; skin thin, bright shiny amber, nearly covered with rich cornelian, marked with peculiar mottled blotches ; stalk one and a half to two inches long set in a medium wide cavity ; suture obscure.

FLESH : very pale yellowish tint ; texture very soft and tender, juicy ; flavor very good if not left hanging too long.

QUALITY ; good for dessert.

VALUE : second class for home market ; fourth class for distant market.

SEASON : early July.

ADAPTATION : south of Lake Ontario.

DOWNER. (*Downer's Late*.)

A delicious dessert cherry.

ORIGIN : Massachusetts.

TREE : a vigorous, upright grower ; fairly productive ; group, Heart.

FRUIT : size large $\frac{3}{4}$ x $\frac{1}{2}$; form heart-shaped ; stem $1\frac{1}{2}$ x $1\frac{1}{2}$ inches long ; apex a slight depression ; color bright shiny red, marbled.

FLESH : creamy white ; texture tender, melting ; flavor rich and sweet.

QUALITY : very good for dessert ; fair for cooking.

VALUE : market second-class.

SEASON : mid July.

DYEHOUSE.

An early Morello cherry, ripening just in advance of Early Richmond, to which it is quite similar.

ORIGIN : Central Kentucky ; an accidental seedling in the orchard of Mr. Dyehouse.

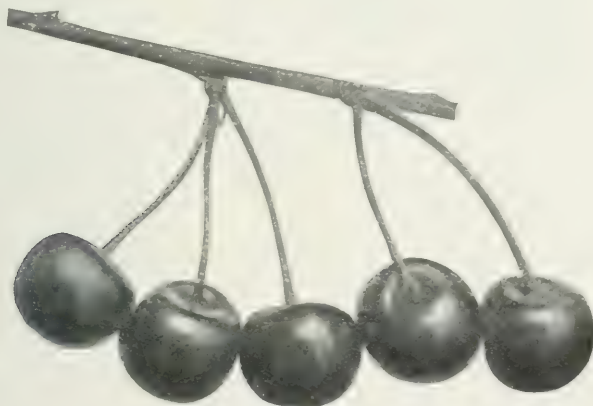
TREE : an early and abundant bearer ; habit round, spreading head, slender ; fairly vigorous ; not as hardy as Richmond ; class Kentish.

FRUIT : medium size, 9-16 x 11-16 of an inch ; roundish oblate ; apex depressed ; stem half inch long, rather stout, set in a large cavity ; color light red.

FLESH : pale yellow ; fairly firm ; juicy ; flavor acid.

QUALITY : dessert poor ; cooking first class.

SEASON : early July.



DYEHOUSE.

EARLY PURPLE. (*Early Purple Guigne*.)

The earliest cherry is the Early Purple, a foreign variety known in France as the Early Purple Guigne. The tree is a vigorous, upright grower, and becomes quite productive as it acquires age. Frequently the birds destroy the fruit before it matures, and if gathered as soon as colored red, it is little more than "skin and bones." The last few days of growth, the fruit fills out wonderfully, and then becomes almost a so-called "black cherry." Not usually profitable.

TREE : upright, vigorous, healthy ; productive when full grown.

FRUIT : medium size ; roundish heart-shaped ; skin dark red to purple ; stem two inches long in a shallow cavity : suture obscure.

FLESH : red to purple ; texture tender, juicy ; flavor sweet and pleasant.

QUALITY : dessert good.

VALUE : market second class.

SEASON : mid June.

ADAPTATION : grown at Maplehurst for thirty years and quite hardy ; recommended for trial north of Lake Ontario.

EAGLE. (*Black Eagle*.)

A very excellent dessert cherry, well deserving a place in the home garden, but not sufficiently productive to be recommended for the commercial orchard. The average annual yield of large trees at Maplehurst is from twenty-five to thirty quarts. The fruit is usually in scattered clusters, and often borne singly, making the gathering expensive. In England this variety is more productive than in Canada.

ORIGIN: England, 1810, by Miss F. Knight, of Downton Castle, from Bigarreau and May Duke.

TREE: second rate in vigor, of a round spreading habit; third rate in productiveness; group, Bigarreau.

FRUIT: medium to large, averaging about $\frac{1}{4}$ long by $\frac{1}{4}$ of an inch wide; form obtuse heart-shaped, almost roundish oblate; skin dark red, becoming almost black; stalk slender, $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long in a medium cavity; suture obsolete; stone small.

FLESH: dark purple; texture tender and juicy; flavor very sweet, rich and delicious.

QUALITY: very good for dessert.

VALUE: first class for near markets; second rate for distant markets because it soon decays.

SEASON: mid July.



BLACK EAGLE. (Reduced).

ELTON.

An excellent dessert cherry for the garden, but too soft and too much inclined to rot, to be worthy of a place in the commercial orchard.

ORIGIN: England.

TREE: a vigorous grower; upright in habit; quite productive.

FRUIT: medium to large; color pale yellow with red blush; stem two inches long set in a deep cavity.

FLESH: light yellow; texture delicate, tender, moderately juicy; flavor sweet, vinous, delicious.

QUALITY: dessert good; cooking fair.

VALUE: fair, but like most white cherries, not popular in the market, because inclined to show the slightest bruises.

SEASON: early July.



ELTON.

GRENNER GLAS.

TREE : upright ; fruit in clusters ; vigorous ; moderately productive.

FRUIT : large in size, $\frac{5}{8} \times \frac{7}{8}$; form oblate, one sided ; color bright red ; cavity broad, shallow ; stem $1\frac{1}{2}$ inches in length ; apex is a small depression ; suture traceable on one side.

FLESH : color yellowish with colorless juice ; texture tender ; very juicy ; flavor tart.

QUALITY : dessert poor ; cooking very good.

VALUE : market first class.

SEASON : mid July.

HORTENSE. (*Reine Hortense*.)

One of the finest flavored of cooking cherries, and one which deserves the first place in the home garden. It is not as productive as the May Duke, but from its habit of fruiting singly is less subject to rot than that excellent variety.

ORIGIN : France, in 1832, by M. Larose, Neuilly : first fruited in 1838.

TREE : of somewhat spreading habit, a vigorous and handsome grower and fairly productive ; group, Duke.

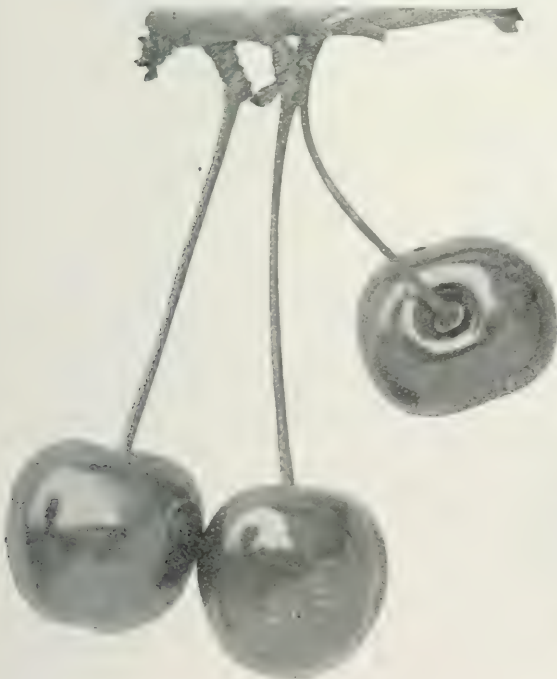
FRUIT : very large ; roundish elongated ; side slightly compressed ; skin, thin, light shining red mottled with darker red, becoming richer in color the longer it hangs ; stalk slender, about two inches long.

FLESH : creamy yellow ; texture netted, very tender, juicy ; flavor slightly subacid, excellent.

QUALITY : very good for cooking ; very good for dessert.

VALUE : first to second class for market.

SEASON : mid July.



HORTENSE.

KNIGHT. (*Knight's Early Black.*)

A delicious early, black cherry, ripening about a week in advance of Black Tartarian. It is a regular and even bearer. The fruit is borne singly, or, occasionally, in pairs, and therefore is not gathered as rapidly as those varieties which grow in clusters. It is one of the most valuable dessert cherries, but not so productive as the Tartarian.

ORIGIN: England, by T. A. Knight, in 1810, from Bigarreau crossed with May Duke.

TREE: healthy, fairly vigorous, with spreading head; second rate in productiveness; group, Heart.

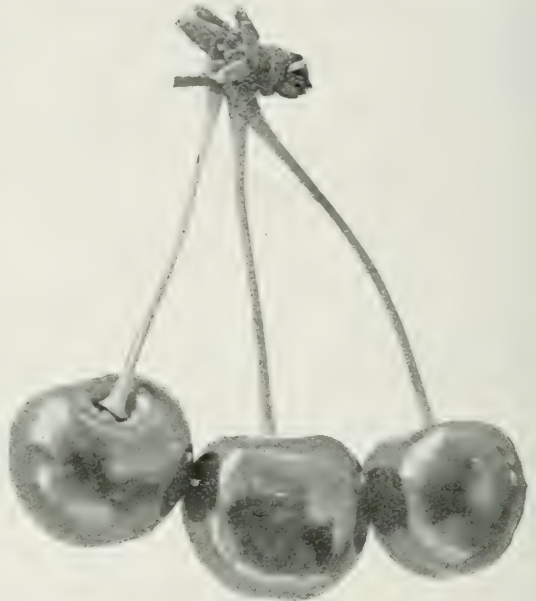
FRUIT: medium to large; form obtuse, heart-shaped, uneven; skin dark red or purple, becoming almost black if allowed to hang; stalk two inches long in a rather large cavity.

FLESH: dark red to purple; texture tender and juicy, but firmer than Tartarian; flavor sweet, rich and delicious; stone small.

QUALITY: very good for all purposes.

VALUE: for market first class.

SEASON: late June.



KNIGHT.

KOSLOV. (*Koslov Morello.*)

A valuable dwarf growing cherry of the Morello class, which is extremely hardy, and promises to be of the greatest value in the cold sections of Ontario.

ORIGIN: fifty trees of this variety were imported from Jaroslav Niemetz of Winnitza Podolie, Russia, in 1889 by Mr. Linus Woolverton, then Secretary of the Ontario Fruit Growers' Association, and by him distributed among the directors, and a few sent to Dr. Wm. Saunders of the Central Experimental Farm, Ottawa.

TREE: habit bush form, very slow of growth, might be planted six feet apart in a field and cultivated two ways; very hardy, Niemetz says it has endured a temperature of 46 degrees below zero in Russia; very productive.

FRUIT: fairly large; form roundish; color dark red, turning black at maturity; stalk one and a half inches long, set in a slight depression; suture traceable.

FLESH: red, turning dark red at maturity; texture tender, juicy; flavor mild acid.

QUALITY: cooking good.

VALUE: almost first class.

SEASON: early August.

LATE DUKE (*Anglaise Tardive*.)

A most desirable cooking cherry, because of its mild agreeable acid; and one of the most profitable of the Dukes, because (1) of its productiveness, and (2) of its season, which is between the Early Richmond and Montmorency. This and May Duke, which precedes it about two weeks, cover the early part of the season for cooking purposes; while Montmorency (Kentish) and English Morello extend the season of cooking cherries to the 1st of August.

TREE: habit upright; very vigorous and very productive; group, Duke.

FRUIT: large of its class, $\frac{3}{4} \times \frac{3}{4}$ of an inch; form roundish, slightly flattened; color partly covered with bright red, but rich, dark red when fully ripe; stalk $1\frac{1}{2}$ inches long, inserted in a shallow cavity; suture traceable; flesh creamy white, tender and juicy; flavor very mild, agreeable acid.

QUALITY: good for dessert; best for cooking.

SEASON: mid July.



LATE DUKE.

MAGNIFIQUE. (*Belle Magnifique*).

Chiefly valuable for its lateness of ripening.

ORIGIN: France.

TREE: upright round habit; vigor moderate; not very productive; Duke.

FRUIT: about $\frac{3}{4}$ of an inch long by $\frac{7}{8}$ broad; form heart shape, flattened, obtuse; color bright red; stem about two inches long, set in a large broad cavity; suture traceable.

FLESH: color light yellow; juice uncolored; texture tender, juicy; flavor sub-acid.

QUALITY: dessert poor; cooking good.

VALUE: market second class.

SEASON: late July.



MAGNIFIQUE.

MAY DUKE. (*Early Duke, Royal Hatice.*)

A fine cooking cherry. The great productiveness, health and vigor of the tree, the mild acid of the fruit ripening over a considerable season, all tend to make this a favorite variety. The fruit is rather tender for distant shipments, and inclined to rot in wet seasons. These Duke cherries have green and ripe fruit at the same time, which makes them undesirable for commercial orcharding, as it necessitates several pickings instead of one, increasing the cost of harvest beyond the margin of profit.

ORIGIN: Medoc, a Province in France, from whence the name is said to be a corruption.

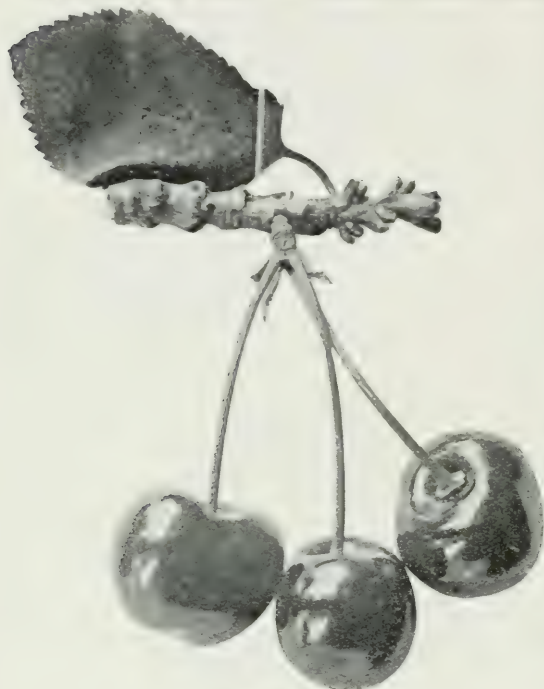
TREE: upright, a habit especially noticeable in young trees; vigorous, hardy and productive; group, Duke.

FRUIT: size small to medium; form roundish, obtuse, heart-shaped, with traceable suture and distinct indentation to apex; grows in clusters; skin bright red, turning darker at full maturity; stalk $1\frac{1}{2}$ to 2 inches long; stone small.

FLESH: red; texture tender, very juicy; flavor subacid, and very good.

QUALITY: good for dessert, first class for cooking.

SEASON: late June.



MAY DUKE.

MEZEL.—(*Monstrous de Mezel, Bigarreaut of Mezel.*)

One of the finest of the late black cherries, of large size and great productiveness. Though a Bigarreaut it has not the fault of its class of being especially subject to rot; it is not so black in color as the Elkhorn, but dark enough a red to be classed with the black cherries.

ORIGIN: Mezel, France; first introduced in 1846.

TREE: upright, spreading, a very vigorous grower; one tree at Maplehurst forty years planted was thirty feet in height in 1897, and covered an area about the same number of feet in diameter; first rate in hardiness and in productiveness; group, Bigarreaut.

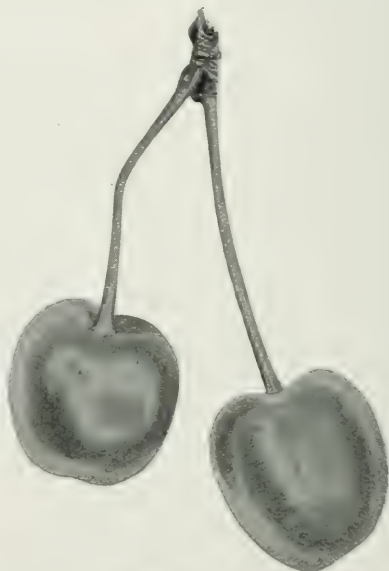
FRUIT: very large, fifteen-sixteenths of an inch long by one inch in width; form obtuse, heart shaped, slightly flattened, with a clearly-defined suture on one side, ending in a slight nipple; skin dark red at first, changing to dark purple at maturity; stalk two inches long, slender, set in good sized cavity.

FLESH: firm, juicy, breaking; flavor sweet, good.

QUALITY: for dessert very good.

VALUE: for market first class.

SEASON: mid July.



MEZEL.

MONTMORENCY.

Of all the Morello cherries this seems to us the most profitable. The tree is one of the most vigorous in its class, the fruit being large and abundant. This and the Early Richmond cover the season very well, and are the two leading Kentish varieties for market. In France this cherry has many synonyms, as, for example, Montmorency, a longue queue, Petit-Gobet, etc.

ORIGIN : Montmorency valley in France in middle of 17th century.

TREE : hardy, healthy, fairly vigorous, very productive and an early bearer.

FRUIT : attached in ones and twos ; size $\frac{3}{4}$ long by $\frac{1}{2}$ inch broad ; form roundish, almost flattened at apex ; skin bright shiny red, becoming darker at maturity, easily detached from the flesh ; stem $1\frac{1}{2}$ inches long, in a rather large cavity.

FLESH : pinkish yellow, tender, very juicy, sprightly acid.

QUALITY : very good for cooking.

VALUE : for market first class.

SEASON : mid July.

ADAPTATION : general over the Province.



MONTMORENCY.

MORELLO.—*English Morello.*

An old reliable variety for cooking purposes, known in England for nearly three hundred years, and deserving of wider cultivation in Ontario. Downing thinks the name Morello is from *Morus*, the Mulberry, from the dark purple color of its juice, which resembles that of the mulberry ; a profitable market variety.

TREE : habit spreading, slender, hardy and very productive ; vigor medium ; group, Morello.

FRUIT : fairly large, roundish, nearly heart shaped, somewhat flattened on one side, with a slightly traceable suture.

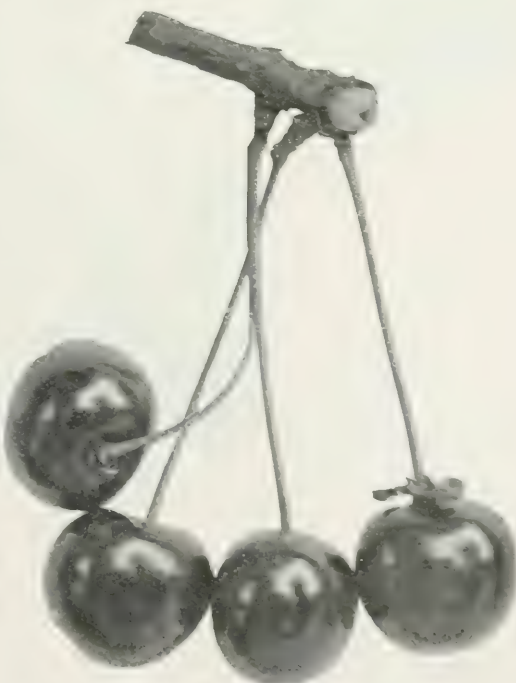
SKIN : red, turning dark red or purple towards maturity ; stalk about $1\frac{3}{4}$ inches long, inserted in a shallow cavity ; stone small, slightly cling.

FLESH : very dark red ; texture tender, juicy ; flavor acid, becoming more sub-acid and agreeable the more it matures.

QUALITY : dessert very poor, cooking first-class.

VALUE : home market second class.

SEASON : early August.



MORELLO.

NAPOLEON. (*Napoleon Bigarreau*, *Royal Anne of California*.)

A valuable variety of foreign origin. Perhaps the most productive variety known, yielding fruit of the very largest size which is in good demand and, therefore, one of the most desirable for the commercial orchard. It has one serious fault, namely, it is very subject to the rot, especially in wet seasons, and sometimes the whole crop of this variety is ruined by it.

TREE: upright, spreading, vigorous, hardy on the south shore of Lake Ontario; very productive.

FRUIT: very large, oblong heart shaped; skin yellow ground, light in shade, rich red cheek in the sun, sometimes mottled; stem $1\frac{1}{2}$ inches long; suture plainly traceable.

FLESH: yellowish white, very firm, meaty, fairly juicy; flavor good; texture much esteemed for canning because it looks well in the jars and bears cooking well.

QUALITY: dessert medium.

VALUE: market first class.

SEASON: early July.



NAPOLEON.

OREL 25.

One of the hardiest of the Morello cherries; reported upon favorably by our northern stations, and considered by Mr. Jones, of our St. Lawrence station, the best all round cherry yet tested for cold sections.

ORIGIN: Russia; imported by Prof. Budd in 1883.

TREE: rather a slow grower; an early and abundant bearer; habit round spreading head.



OREL.

FRUIT: medium size, $\frac{5}{8}$ x $\frac{7}{8}$ of an inch; form roundish; color carmine; stem one and a quarter to one and a half inches in a round cavity; apex a distinct depression; suture partly traceable.

FLESH: color yellowish; texture tender, juicy; juice uncolored; flavor mild subacid.

QUALITY: dessert poor; cooking good.

VALUE: market first class

SEASON: mid July.

ADAPTATION: one of the hardiest varieties.

OLIVET.

From tests in the experimental orchard, we judge the Olivet to be a valuable variety for the home garden. The tree is a fine grower, and the fruit large and attractive, with a mild acid flavor, while in season it immediately succeeds the Reine Hortense.

TREE: of French origin, usually classed with the Dukes, fairly vigorous; hardy; productiveness second rate

FRUIT: large, $\frac{3}{4}$ by $\frac{7}{8}$, obtuse, heart-shaped, almost round; color dark rich carmine; stem 1 to 1 $\frac{1}{2}$ inches long in a broad cavity, often in pairs.

FLESH: reddish; texture soft, melting, very juicy; juice stains red; flavor very mild, pleasant acid.

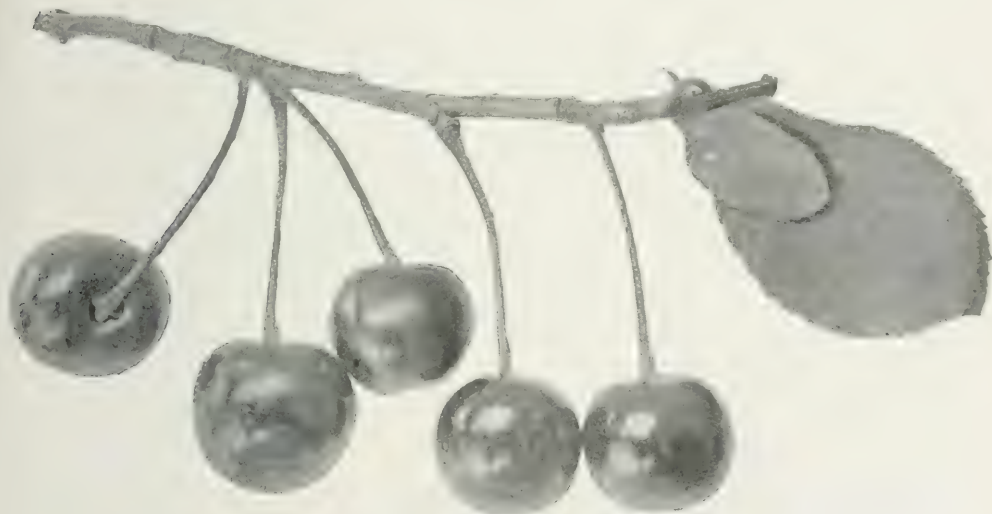
QUALITY: dessert fair, cooking very good to first-class.

VALUE: not yet determined in Ontario.

SEASON: early July.

OSTHEIM.—(*Griotte d'Ostheim*.)

This Morello cherry was distributed throughout the Province by the Ontario Fruit Growers' Association. The fruit is of fair size, productive enough to be profitable, and good for all purposes. Its hardness should make it a special favorite in the colder sections to succeed the Montmorency.



OSTHEIM.

ORIGIN: South of Spain, brought to Germany early in the 18th Century, and cultivated near Ostheim, Saxe-Weimar, whence its name.

TREE: third rate in vigor, almost a dwarf; first in hardiness, and second rate in productiveness; group, Morello.

FRUIT: medium, about $\frac{9}{16}$ x $\frac{1}{8}$ of an inch in length and breadth. The variety must vary, since Dr. Hogg describes it as large, and LeRoi describes the stalk two inches long, set in a pronounced cavity; form round, slightly depressed at the side; color very dark purple, almost black when ripe; stalk one and three eighths inches; suture not traceable; pit small, cling.

FLESH: color very dark purple, texture tender, juicy, almost sweet when ripe, agreeable.

QUALITY: poor for dessert, fair for cooking.

VALUE: for market third class.

SEASON: late July.

ADAPTATION: quite general; found fruiting freely in St. Joseph's Island, Algoma.

OHIO (*Ohio Beauty*).

A sweet cherry, succeeding Wood : not subject to rot

ORIGIN : Ohio.

TREE : habit upright ; vigorous producer ; class Heart.

FRUIT : size large, $\frac{1}{2}$ x $\frac{1}{2}$; form heartshaped ; stalk one and a half inches long, slender in a moderately deep, somewhat irregular cavity ; color light yellow, nearly overspread with light and dark shades of bright red.

FLESH : color yellowish white ; texture tender, meaty, somewhat juicy ; flavor sweet, very pleasant.

QUALITY : dessert very good ; cooking fair.

VALUE : market second class compared with black oxhearts.

SEASON : early to mid July.

PURITY.

A remarkably fine Morello cherry, ripening slightly in advance of the Early Richmond, and very productive. It closely resembles Dyehouse.

TREE : fairly vigorous, healthy and productive ; an early bearer.

FRUIT : size fair, $\frac{3}{8}$ x $\frac{3}{8}$ of an inch ; form roundish ; color very dark red ; stem long, $1\frac{1}{2}$ to 2 inches long, set in a deep cavity ; apex much depressed ; pit small.

FLESH : color yellowish ; texture tender ; very juicy ; flavor subacid ; pleasant.

QUALITY : dessert fair ; cooking very good to best.

VALUE : market first class.

SEASON : late June to early July.

PLYMOUTH (*Plymouth Rock*).

A valuable white Bigarreau because not subject to rot, and a fine shipper.

ORIGIN : Connecticut.

TREE : vigorous ; very productive ; an early bearer.

FRUIT : medium, $\frac{3}{4}$ x $\frac{3}{4}$ of an inch ; heart shaped ; color bright red in sun on yellowish ground ; stem $1\frac{3}{8}$ inches long in a one-sided cavity.

FLESH : yellow ; texture tender, meaty, moderately juicy ; flavor sweet, rich, excellent.

QUALITY : very good for dessert.

VALUE : market second class.

SEASON : mid July.

RICHMOND (*Early Richmond*).

(*Virginian May* ; *Kentish Pie of Hogg* ; *Hative of LeRoy*.)

This Morello cherry appears to be of French origin, and George Lindley supposed that it had been brought into England from Flanders in the reign of Henry III.

TREE : slow grower, slender in branch ; very hardy ; very productive in proportion to its size



RICHMOND.

FRUIT : Below medium, free from rot and not very subject to curculio ; form almost round, though slightly flattened ; skin uniformly of a bright red becoming darker as it matures ; stem slender, about one inch in length, often carrying the calyx, inserted in a good sized cavity ; apex set in a small indentation.

FLESH : very tender in texture ; yellowish with abundant uncolored juice ; flavor quite acid ; pit small.

QUALITY : poor for dessert, but first class for all culinary purposes.

VALUE : very good for market.

SEASON : early to mid July.

ADAPTATION : succeeds wherever cherries are grown in the Province.

ROCKPORT.

A Bigarreau originated by Prof. Kirkland, of Cleveland, Ohio. Its season of ripening is about the same as Governor Wood, but it is a heavier bearer of fruit, about the same size and less highly colored. It would be profitable were it not so subject to rot, but nearly every year we have lost a large portion of the crop of this variety at Maplehurst from this cause. Like the other Bigarreaus, it is too firm a cherry to be a favorite with the birds.

TREE : upright, spreading; fairly vigorous; very productive.

FRUIT : large, roundish, obtuse, heart-shaped; skin amber nearly covered with bright red.

FLESH : pale yellow; texture firm, juicy; flavor sweet and good.

QUALITY : dessert or cooking good.

VALUE : market second class.

SEASON : late June.

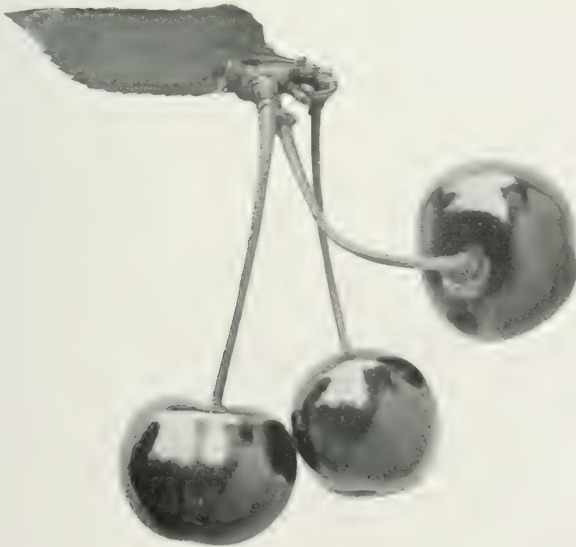
ROYAL DUKE.

A fine pie cherry, but it ripens unevenly, and is inferior to the Late Duke both in quality and productiveness.

ORIGIN : France.

TREE : very upright; vigorous; fairly productive; Duke.

FRUIT : medium size, half by three-quarters of an inch in diameter; form roundish, heart shape; color light red, crimson on sunny side; stem one and a half inches long set in a round regular cavity; apex a dimple.



ROYAL DUKE.

FLESH : flesh color; texture moderately firm, juicy; flavor subacid.

QUALITY : cooking good.

VALUE : market first class.

SEASON : early July.

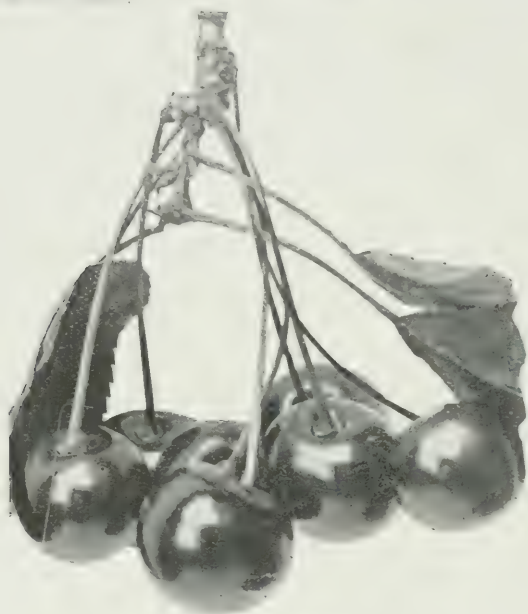
RUSSIAN MORELLO. (*Russian 207*).

A good cooking cherry.

ORIGIN: Russia.

TREE: vigorous; productive.

FRUIT: small, $\frac{1}{2}$ inch long by $\frac{3}{4}$ wide; roundish in form; color dark red; stem two inches long in a shallow cavity.



RUSSIAN MORELLO.

FLESH: color red with colored juice; texture tender, moderately juicy, semi-cling; flavor ordinary.

QUALITY: dessert useless; cooking good.

VALUE: market second class.

SEASON: mid July.

SCHMIDTZ (*Schmidt's Bigarreau*).

A magnificent cherry, but so far not sufficiently productive.

TREE: upright; very vigorous; not very productive; group, Bigarreau.

FRUIT: very large; form obtuse, heart-shaped; color dull red, mottled with rich red; stem $1\frac{1}{4}$ inch long in a large cavity; suture slight.

FLESH: color reddish; texture firm, moderately juicy, flavor sweet and rich.

QUALITY: first-class for dessert.

VALUE: market, first-class.

SEASON: late July.

SPANISH (*Yellow Spanish*).

Of the Bigarreau cherries this is one of the finest, both on account of its great size and its delicious flavor. The tree grows to a very large size, surpassing in this respect any other cultivated variety with which we are acquainted. It does not average very productive, because the fruit often blasts and drops, or is destroyed by *Monilia*. When, however, it does mature a good crop, the yield is enormous.

The variety is of European origin, and was introduced into the United States in 1800.

TREE: very vigorous, of large growth; habit, spreading, fairly productive.

FRUIT: very large and of a beautifully waxy lustre; form round, obtuse, heartshaped; skin clear amber, nearly covered with red when exposed to the sun; stem stout, $1\frac{1}{2}$ inches long in a wide cavity; suture traceable.

FLESH: pale yellow; texture firm, juicy, breaking; flavor sweet, delicious when well ripened.

QUALITY: dessert very good; cooking or canning, very good.

SEASON: early July.

VALUE: market first class.

SUDA (*Suda Hardy*).

A fine Morello cherry, but of about the same season as the Montmorency and hardly as productive.

ORIGIN : Missouri.

TREE : habits round head, Kentish ; fairly vigorous, very hardy ; productive.

FRUIT : size $\frac{7}{8}$ of an inch in diameter ; form roundish, slightly flattened ; color red ; stem $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long set in a regular cavity : apex very slight ; suture barely traceable.

FLESH : yellowish white ; texture soft, tender, juicy ; flavor tart.

QUALITY : dessert useless ; cooking very good.

VALUE : market almost first-class.

SEASON : mid July.

TARTARIAN. (*Black Tartarian*.)

Of black cherries this is one of the choicest, whether for market or for dessert on the home table. Of large size and delicious flavor, it is relished by all cherry lovers, and, being somewhat soft fleshed, it is very subject to the ravages of birds ; it is also subject to rot in wet seasons. On this account it is often necessary to harvest and ship it a little on the green side. It is not so productive as some others, but it makes up for this by bringing a higher price.

ORIGIN : Russia and Western Asia, introduced into England in 1796, and thence to America.



TREE : erect, vigorous, attaining large size : fairly productive : group, Heart.

FRUIT : very large, $\frac{3}{4}$ x 1 inch, heart-shaped, of somewhat irregular outline ; stem 1 $\frac{1}{2}$ inches long ; skin bright purplish black.

FLESH : dark purple, tender and juicy ; flavor rich and delicious.

QUALITY : dessert very good.

VALUE : market first class.

SEASON : early July.

ADAPTATION : south of Lake Ontario, and in sheltered places a little further north.

WINDSOR.

A valuable late cherry for either home use or market, its firm flesh making it a better shipper than most dark colored cherries. Indeed, from the middle to the end of July, when this cherry is at its best, there is no other to compete with it, the Elkhorn being just over. The tree is not an early bearer, and the fruit is very subject to the rot in some locations and needs thorough spraying with Bordeaux to prevent this fungus.

ORIGIN: by James Dougall, Windsor, Ontario.

TREE: a vigorous, upright, symmetrical grower, healthy, very hardy and productive.

FRUIT: large, $\frac{1\frac{1}{2}}{8}$ inch long by 1 inch wide; form round, obtuse, heart-shaped; color dark red turning darker as it hangs; stem $1\frac{1}{2}$ inches long, set in a moderately deep cavity; in twos and threes; suture obscure.

FLESH: yellowish, with reddish tint; texture firm, moderately juicy; flavor rich and sweet.

QUALITY: dessert very good; cooking poor.

VALUE: first class.

SEASON: late July.

ADAPTATION: farther north than most Bigarneau cherries.



WINDSOR.

WOOD. (*Governor Wood*.)

This variety has proved itself a most satisfactory cherry for both dessert and market purposes. It is a very productive variety, and, though somewhat tender in flesh, is not nearly so subject to ravages by birds as Early Purple or Tartarian. Originated by Prof. Kirtland, of Cleveland, Ohio, U.S.A.

TREE: upright, spreading, healthy, vigorous and hardy wherever the peach succeeds.

FRUIT: medium to large $\frac{3}{4}$ to $\frac{1}{2}$ of an inch in length and breadth respectively; form roundish-heartshaped; skin light yellow, shaded with light to deep red; stem $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long in a broad deep cavity; suture distinct on one side.

FLESH: yellowish; texture tender, juicy; flavor sweet, aromatic and delicious.

QUALITY: dessert, very good.

VALUE: market, first and second class.

SEASON: late June.



WOOD.

THE PEACH.

The peach is the tenderest of the large fruits grown in Ontario, and the fact that it can be grown so successfully in some parts of the Province has done much to dissipate the idea which at one time prevailed in the United States and abroad that the climate of Ontario was too severe for anything but the hardiest fruits.

The district in Ontario where the peach succeeds best is the Niagara Peninsula, where Lake Ontario and Lake Erie do much to ameliorate the climate and prevent in a large measure the extremes in temperature which are fatal to peach culture. In the Essex Peninsula, or the extreme south-western part of the Province, the peach also succeeds well, but has in the past been more subject to root killing in winter. This may probably be guarded against in the future by the more general use of cover crops.

The peach also does fairly well where the soil is suitable all along the Lake Erie shore, the most favorable locations, however, being within four or five miles of the water. During recent years it has been found that the peach will thrive along the shore of Nottawasaga Bay, which is known as the Georgian Bay district, but up to the present time only a limited number of trees have been planted. It is still doubtful if peaches will ever be grown there to any extent commercially.

Peaches are raised for home use all over the western part of the Province with varying degrees of success, depending on the protection afforded and the soil, but where the temperature falls much more than 10 degrees Fahr. below zero success is very uncertain. Probably the extreme northern limit where peaches have been produced in the open is at Orillia, though the trees lived but a few years. They have been grown as far east as the city of Belleville, and perhaps further.

The market for the best peaches is good, and the peach where it can be grown successfully is one of the most profitable fruits.

As the peach is a tender fruit and the trees suffer when there are extremes of temperature, and at certain seasons when there are light frosts, great judgment should be shown in choosing a site for the orchard. Where possible, a site should be chosen with an exposure facing the water. If a northern exposure is available and the site is suitable in other ways it should be utilized, as often great injury is done by spring frosts when the buds are swelling, and buds will not expand as rapidly on a northern slope as on a southern. A site where local frosts are known to occur should be avoided.

While the situation for the peach orchard is important, a site will avail little if the soil is not suitable. The soil should be as near as possible a rich warm sandy loam with an open gravelly subsoil affording perfect drainage. Orchards are occasionally found thriving on heavier soils, but success is less certain on the heavier lands. The soil should be thoroughly prepared as recommended for the apple, and no fruit will respond better to thorough tillage than the peach.

Trees one year from the bud are the best kind to plant. They should be thrifty and free from insects and disease. The best time to plant is early in the spring, although fall planting is sometimes successful. Peach trees are planted from fourteen to twenty feet apart, depending upon the system of pruning which is followed. The former distance is adopted only when severe heading back is practised, otherwise the trees would soon become too crowded. For general culture the best distance is from eighteen to twenty feet apart each way. When planting, some of the best growers remove all of the side branches, leaving a mere whip, while others cut the side branches back to within one or two buds of the main stem. The advantage gained by the latter method is the tree is stronger at the crotches and not quite so liable to split down with weight of crop. Whatever plan is adopted, the tree should be pruned back severely when set. Peaches are

usually headed lower than other large fruits, from two to three feet from the ground being the usual distance at which the head is started. For the first two or three years pruning should be carefully done in order to get a well balanced top with four or five strong branches, avoiding bad crotches. In order to keep the tree within bounds, severe heading back is necessary until the trees come into full bearing, the usual practice being to head back from one-half to two-thirds of the previous year's growth every spring, at the same time removing altogether branches which will make the top too crowded. The object is to have a tree which will bear fruit all through the head instead of merely on the outside or at the top of the tree.

The low heading of peach trees is rapidly gaining in popularity with peach growers. By this system the tree has very little bare trunk, the lowest branches starting from near the ground, while the highest is not more than eighteen inches. The trees are kept severely headed back especially at the top, the result being that much stockier trees are formed. The advantages of this system are that the fruit is picked easier, that there is more bearing wood, that there is less injury from wind, and that the trees can be sprayed to greater advantage.

The cultivation of peach orchards should be very thorough to produce vigorous growth, as the proportion of strong new growth which is made, regulates to a large extent the size of the crop, for peaches, unlike most other large fruits, are borne on the wood made the previous year.

Cover crops are very desirable in peach orchards, as the peach soils are usually deficient in humus which cover crops supply, and the latter protect the roots of the trees in winter, thus lessening the danger from root killing. As peach trees when in full bearing draw heavily on the potash in the soil, a good application of unleached ashes every two or three years is beneficial, and muriate of potash and bone meal applied at the rate of about 200 pounds per acre each, annually should do much good, especially when barnyard manure cannot be obtained.

Where it can be managed, it usually pays well to thin peaches on the tree. This is done when they are about the size of small hickory nuts, the peaches being left from four to six and even eight inches apart on the branches.

It requires judgment to know just when to pick a peach, as much will depend upon the distance it is to be shipped. When intended for immediate consumption, no one is likely to pick a peach until it is ready to eat, but for a distant market it must be still firm, though well colored. Fruit which is picked on the green side never attains its full flavor and unfortunately much fruit of this class reaches the market, and it undoubtedly lessens the consumption of this fine fruit. Bruising of peaches should be avoided, hence great care should be taken in handling them.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Commercial:

Sneed: Whitefleshed, clingstone, quality only fair, earliest of all.

Alexander: Whitefleshed, clingstone.

Hynes: Whitefleshed, semi-cling, quality good.

St. John: Yellowfleshed, freestone, quality good.

Mountain Rose: Whitefleshed, freestone, quality very good.

Early Crawford: Yellowfleshed, freestone, quality very good.

Champion: Whitefleshed, freestone, quality very good, for home use, or near markets.

Brigdon: Yellowfleshed, freestone, quality good.

Fitzgerald: Yellowfleshed, freestone, quality very good.

Reeves: Yellowfleshed, freestone, quality fair, large size.

Elberta: Yellowfleshed, freestone, quality fair, good for long distance shipments.

Oldmixon: Whitefleshed, freestone, quality good.

Stevens: Whitefleshed, freestone, quality good.

Smock: Yellowfleshed, freestone, quality fair, very late, good shipper.

Domestic:

Hynes, St. John, Early Crawford, Oldmixon, Longhurst, Stevens.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS

Niagara District: By Linus Woolverton, Grimsby, Ont.

Commercial: Sneed, Alexander, Greensboro, St. John, Early Crawford, New Prolific, Champion, Elberta, Willett, Smock.

Domestic: Rivers, Hynes, St. John, Early Michigan, Lewis, Crosby, Champion, Reeves, Wonderful, Jacques Rareri, Wheatland, Longhurst.

Essex District: By W. W. Hilborn, Leamington, Ont.

Commercial: Alexander, St. John, Brigdon, Early Crawford, Fitzgerald, New Prolific, Engol, Elberta, Golden Drop, Kalamazoo, Banner, Smock.

Domestic (Whiteflesh): Alexander, Mountain Rose, Oldmixon, Stevens.

(Yellowflesh): St. John, Early Crawford, Fitzgerald, New Prolific, Engol, Crosby, Golden Drop, Banner.

DESCRIPTION OF VARIETIES.

ALEXANDER.

An early variety considerably grown in the Niagara district and in Essex County. It is a combination of poor quality for dessert purposes and poor also for cooking, so that, in competition with better varieties coming in at the same time from southern orchards, it sells at a low price in our markets.



ALEXANDER.

ORIGIN : chance seedling, Mount Pulaski, Ill., on farm of A. O. Alexander.

TREE : vigorous ; hardy ; productive.

FRUIT : medium ; globular, sides unequal ; color greenish, suffused with dark and light red ; suture broad ; apex slightly sunken.

FLESH : color, greenish white ; texture, firm, juicy, half melting, clings to stone ; flavor, sweet and fairly good.

QUALITY : dessert poor ; cooking poor.

VALUE : market second class.

SEASON : early August.

BANNER

A popular late market peach among the Essex fruit growers.

ORIGIN : Essex County, Ontario : first fruited on a large scale in 1903.

TREE : hardy and productive.

FRUIT : medium to large : round : color yellow with red cheek, attractive.

FLESH : yellow : texture, fine grained, moderately juicy : flavor rich.

QUALITY : good.

VALUE : market first class

SEASON : early October.

BRIGDON (*Garfield*.)

BRIGDON.

A good commercial variety, of the Early Crawford class.

ORIGIN : New York State.

TREE : vigorous ; productive.

FRUIT : size, medium to large ; form, roundish oval ; color, yellow with red cheek ; suture traceable.

FLESH : free ; color yellow ; texture tender, very juicy ; flavor rich, vinous.

QUALITY : first-rate for all purposes.

VALUE : first class for market.

SEASON : late August to early September.



SECTION OF BRIGDON.

BEERS SMOCK.

"Medium to large, round; color creamy white dark red blush; cavity quite deep; suture distinct, flesh quite juicy, yellow, with red at pit, tender, rich; quality good; pit free. Origin, New Jersey." *American Horticultural Manual*.
Not sufficiently tested in Ontario. Season mid October.

BOWSLAUGH.

Esteemed for canning, but inferior in size to the Longhurst, which it closely resembles.

ORIGIN: Grimsby, Ontario, with Mr. Bowslaugh.

TREE: productive.

FRUIT: size small to medium; color of skin, yellow with a dull red cheek; suture traceable more than half way around; cavity deep, irregular, apex prominent.

FLESH: free from pit; yellow, pink at pit; texture tender, not very juicy, lacking in flavor, neither sweet nor acid.

QUALITY: dessert poor; cooking fair to good.

VALUE: market, second class.

SEASON: first half of October.

CHAMPION.

A beautiful white fleshed peach with a red cheek, and free stone. The flavor is delicious, and it may be classed as the best dessert peach of its season, but a little tender for distant shipment.

ORIGIN: Illinois.

TREE: vigorous, moderately productive.

FRUIT: large; form roundish, fairly regular; color of skin, creamy white, with red cheek in the sun; suture visible two-thirds of the circumference; apex small in a slight depression; cavity deep; stone free.



CHAMPION.

FLESH: white, pinkish at the pit; texture, fine, tender, juicy; flavor, rich, sweet and agreeable.

QUALITY: dessert among the best.

VALUE: first-class for home markets, but rather tender for distant shipments.

SEASON: early September, coming in with last Yellow St. John and the first Early Crawfords.



SECTION OF CHAMPION.

CHILI (*Hill's Chili*).

Recommended for drying : a good shipper.

ORIGIN : New York State.

TREE : fairly vigorous : productive.

FRUIT : medium to large ; form roundish ovate : color pale yellow, with red cheek ; down thick, whitish ; cavity narrow, deep ; suture marked ; apex a point.

FLESH : light yellow tinted red at the pit ; texture tender, moderately juicy ; flavor sub-acid ; free.

QUALITY : dessert poor ; cooking good ; drying good.

VALUE : home market, second class.

SEASON : mid September.

CROSBY (*Excelsior, Hale's Hardy*.)

A peach of good quality, but scarcely large enough for the commercial orchard.

ORIGIN : Massachusetts 1876, by Mr. Crosby, nurseryman ; named Excelsior by the Massachusetts Agricultural College ; Hale's Hardy, because Mr. J. H. Hale was the first grower to plant it extensively, and finally Crosby by the United States Division of Pomology.

TREE : vigorous ; healthy ; fairly hardy ; very productive.



CROSBY.

FRUIT : medium size ; form almost round, slightly one-sided ; color yellow, with bright red cheeks ; very pretty ; cavity, deep, abrupt ; apex small in a slight depression ; suture traceable.

FLESH : color, bright yellow, red at the stone ; texture, fine, moderately juicy, tender ; flavor, sweet and very agreeable.

QUALITY : very good for dessert, and good for cooking.

VALUE : first class for home market.

SEASON : late September to early October.

EARLY CRAWFORD.

Early Crawford has long held its place at the head of the list of peaches both for home use and for market. Its beautiful golden color, its large size, its free stone and rich flavor all unite in giving it a just claim to this position. Its buds are a little more tender than those of some other varieties, and, consequently, many growers hesitate to plant it, but where high cultivation and plenty of fertilizer is given, fine crops of luscious fruit have resulted.



EARLY CRAWFORD.

ORIGIN: Middleton, N.J., by Wm. Crawford.

TREE: vigorous; productive under favorable conditions; bloom not conspicuous.

FRUIT: large to very large, oblong; suture shallow; apex prominent, swollen; color golden yellow, with rich red cheek.

FLESH: color, yellow; flavor, sweet, rich; free from stone, which often parts in middle when nearly ripe.

QUALITY: dessert and cooking, very good.

VALUE: first class for market.

SEASON: early September.



SECTION EARLY CRAWFORD.

EARLY MICHIGAN.



EARLY MICHIGAN

A very good dessert peach.

ORIGIN : Georgia.

TREE : healthy, vigorous and productive.

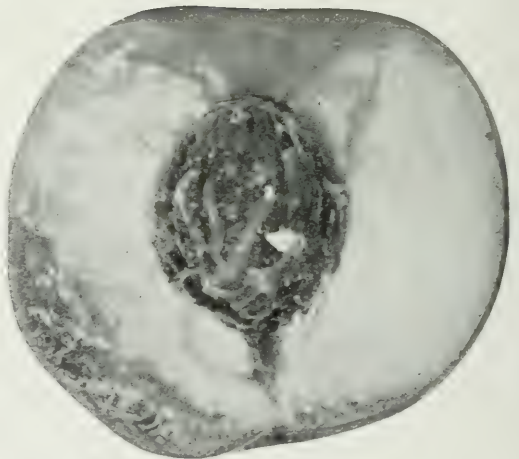
FRUIT : medium size, wide, form round ; color, cream or greenish white ground nearly covered with crimson ; cavity, large and deep ; suture very distinct from cavity to apex and beyond ; pit a clingstone.

FLESH : greenish white, red at pit ; texture tender and juicy ; flavor, subacid, very pleasant.

QUALITY : dessert very good.

VALUE : market second class.

SEASON : middle of August.



SECTION OF EARLY MICHIGAN.

EARLY PURPLE.

For home use, as a dessert peach, this is one of the best of its season. Between 1860 and 1870 this variety was grown as the earliest market peach in Southern Ontario, but its extreme tenderness of flesh and rapid softening after maturity led to its giving place to other varieties.

TREE : thrifty ; vigorous ; hardy ; fairly productive.

FRUIT : form, irregular, ovate, one-sided ; skin, bright red, downy ; basin deep ; stone almost free.

FLESH : greenish white in color ; texture, very tender, very juicy melting ; flavor, sweet, rich, agreeable.

QUALITY : dessert very good ; cooking poor.

VALUE : near market third class ; distant market poor.

SEASON : late August to early September.



ELBERTA

FRUIT: medium to large, roundish oval, one side somewhat larger than the other, suture distinct; skin lemon yellow, with a fine red cheek; stone free, deeply corrugated, pointed.

FLESH: yellow; texture, moderately juicy.

QUALITY: dessert fair; cooking, best.

VALUE: home market first class; foreign market first class.

SEASON: late September, about a week later than Early Crawford.



SECTION OF ELBERTA.

ENGOL (*Mommeth*).

A valuable variety for either home use or market.

TREE: strong upright grower; quite productive.

FRUIT: medium to large; form roundish; cavity medium; apex slight; suture a little over half around; color yellow, with reddish cheek.

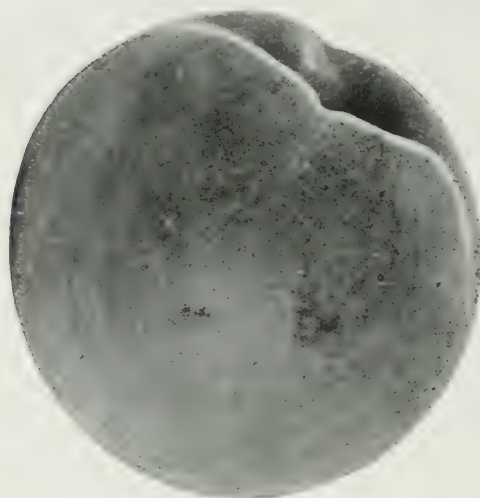
FLESH: color yellow, with tinge of red at pit; texture tender, juicy; flavor pleasant, nearly sweet; free.

QUALITY: dessert or cooking very good.

VALUE: market first class.

SEASON: first half of September.

FITZGERALD



FITZGERALD.

FRUIT: size medium to large; form roundish ovate; color bright yellow, covered with deep red; down moderate in quality; cavity broad and deep; apex a small point in a slightly depressed basin; suture distinct; stone free.

FLESH: yellow, with red at pit; texture tender and juicy; flavor excellent.

QUALITY: dessert good.

VALUE: home market first class.

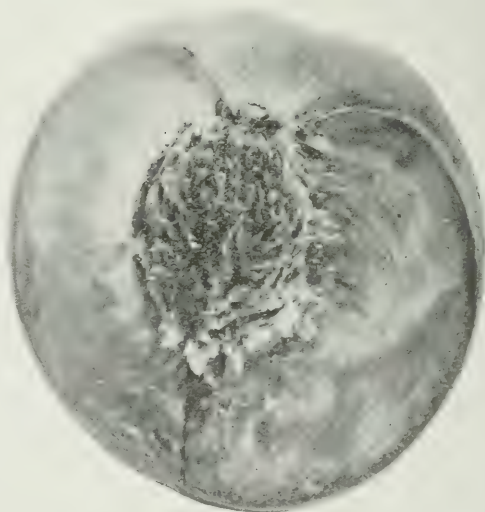
SEASON: early to mid September in Niagara District.

ADAPTATION: one of the hardiest varieties and successfully grown in Georgian Bay District.

Since the Early Crawford has been such a popular peach both for home use and market, every new introduction of a variety which is of the same class, has been welcomed by the public, especially where it may be used to extend the season. The Fitzgerald is not so large as the Early Crawford, but to many the flavor is finer for dessert, and its season is a trifle later. Like the latter, it is too tender for very long shipments.

ORIGIN: in the garden of Mr. Fitzgerald, Oakville, Ontario, about 1895.

TREE: hardy, healthy and productive.



SECTION OF FITZGERALD.

FOSTER.

A large yellow peach of the Early Crawford class, considered a little better in quality, but not so productive.

ORIGIN: J. T. Foster, Medford, Massachusetts.

TREE: vigorous; tender in fruit bud; not very productive.

FRUIT: size large; form roundish, slightly flattened; with a slight suture; color, bright yellow, shaded with orange red.

FLESH: free; color bright yellow, tinged with red at pit; texture tender, juicy; flavor rich, vinous, pleasant, subacid.

QUALITY: dessert good; cooking good.

VALUE: near market first class.

SEASON: early to mid September.

GOLDEN DROP.

"Medium, roundish ovate; color rich yellow, or, as it grows in the South, 'a sort of transparent golden yellow,' often with a blushed cheek; cavity broad, shallow; suture obscure except near apex. Flesh yellow, vinous, almost sweet, good; pit free. Season late September. Attractive in market."—*Budd*.

GREENSBORO



GREENSBORO.

The best dessert peach of its season, but too tender in flesh to be a good shipper; worthy of a place in the home garden.

ORIGIN: North Carolina.

TREE: vigorous; very productive; an early bearer.

FRUIT: large; form flattened; color a deep cream with bright red cheek; cavity narrow, deep; suture slight; apex sunken; not subject to rot.

FLESH: color cream; texture tender, melting, very juicy; flavor sweet and agreeable; free stone.

QUALITY: dessert good.

VALUE: market second class.

SEASON: mid August.



SECTION OF GREENSBORO.

HALE (*Hale's Early.*)

An early peach of very beautiful appearance, but inclined to rot before it ripens. The flesh remains firm, even after the outside presents the appearance of being ripe, so that it is not a favorite variety. Its comparative earliness at one time made it a very popular market variety, but its season is now preceded by that of Sneed, Greensboro, Early Rivers, Alexander and Triumph.

ORIGIN : Ohio.

TREE : vigorous, healthy and productive.

FRUIT : medium to large, form roundish ; color of skin, dark red on sunny side, green with splash of red on shady side ; apex small, slightly pointed in dimpled depression ; cavity deep ; suture extends to apex ; pit half free.

FLESH : greenish yellow to white ; texture firm until very ripe, then melting and juicy ; flavor sweet and agreeable.

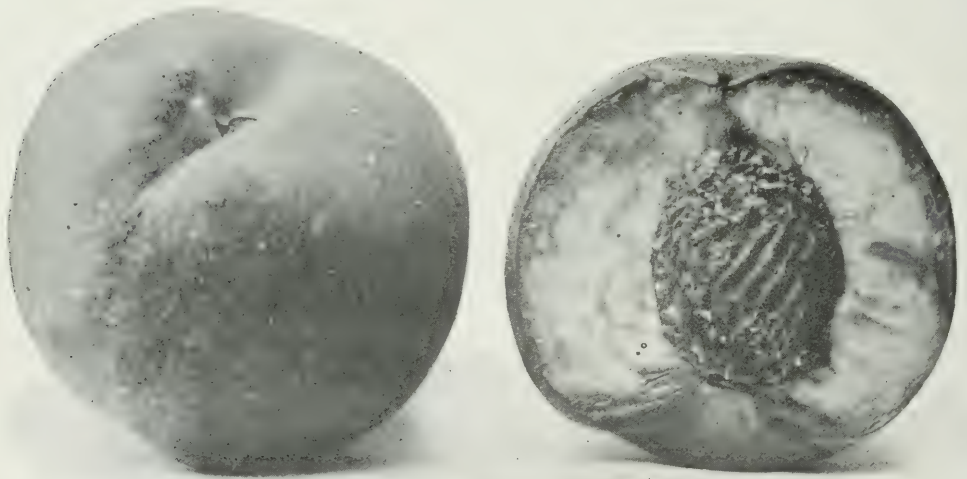
QUALITY : dessert and cooking fair.

VALUE : home market second class.

SEASON : late August.

HYNES (*Hynes's Surprise.*)

A very good early dessert peach, but the fruit is inclined to rot in wet seasons.



HYNES.

ORIGIN : introduced in 1895 by Mr. S. D. Willard of Geneva, N.Y.

TREE : vigorous ; productive.

FRUIT : form roundish, slightly one-sided ; size medium, color greenish white with bright red cheek, sometimes deep red in the sun ; cavity narrow and deep ; suture distinct ; dots numerous ; skin thin and tenacious ; stone, semi-cling.

FLESH : color yellowish white ; texture juicy ; flavor sweet and agreeable.

QUALITY : dessert, good to very good.

VALUE : home market first class ; distant market third class.

SEASON : mid to late August.

JACQUES RARERIPE.

A fine yellow peach, succeeding the Early Crawford, but too tender in flesh for distant shipment.

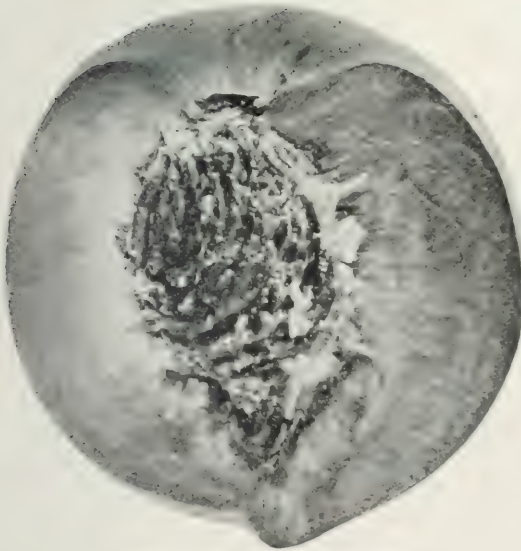
ORIGIN : Massachusetts.

TREE : vigorous, healthy and productive.

FRUIT : size large ; form roundish oblate ; color dark yellow, shaded with red, especially on the sunny side ; down heavy ; cavity large and deep ; apex in a depression ; suture distinct ; stone free.



JACQUES RARERIPE.



SECTION OF JACQUES RARERIPE.

S F. O.

FLESH : color deep yellow, red at the pit ; texture tender, juicy ; flavor good, not very sweet.

QUALITY : dessert good ; cooking very good.

VALUE : near market first class ; distant market, second class.

SEASON : mid September.

KALAMAZOO.

A popular market peach in Michigan ; inferior to Elberta.

ORIGIN : Michigan.

TREE : vigorous and very productive.

FRUIT : medium in size, form roundish oval, sides unequal ; color yellow, with red cheek ; cavity deep, narrow, irregular : apex a small point in a slight depression : suture traceable beyond the apex ; free stone.



KALAMAZOO.

FLESH : color yellow, red at pit ; texture moderately tender and juicy ; flavor fairly sweet.

QUALITY : dessert poor ; cooking good.

VALUE : near market good ; rather too small to sell with Elberta, or even to follow that large, showy variety.

SEASON : mid to late September.

LATE CRAWFORD.

A fine large yellow peach, not quite equal to Early Crawford in flavor. It has not been very profitable because the tree is not very productive and the fruit is inclined to drop before it reaches its best condition.

ORIGIN : New Jersey.

TREE : vigorous ; only fairly productive.

FRUIT : large to very large ; color dull yellow or olive green, with dark red cheek ; cavity large and deep ; suture traceable ; free stone.

FLESH : deep yellow, red at the stone ; texture juicy and melting ; flavor rich, vinous.

QUALITY : dessert good ; cooking very good.

VALUE : market, first class.

SEASON : late September.

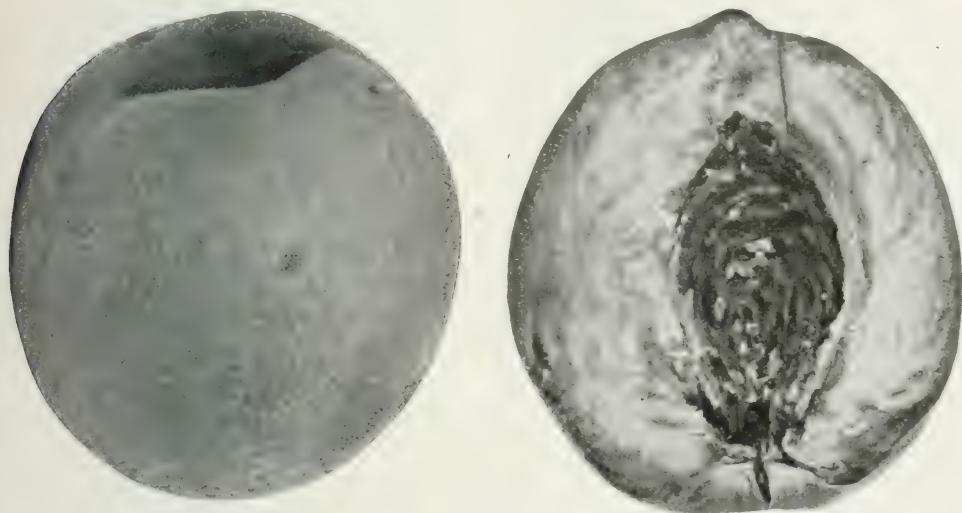
8a F. O.

LONGHURST.

A very productive late variety, highly esteemed for canning. It is considered a profitable variety by many peach growers, but unless given the best culture, the fruit is small and unattractive in appearance.

TREE: hardy; fairly vigorous; very productive. Budd says the fruit buds of this variety have proven exceptionally hardy in Michigan.

FRUIT: medium in size; form oval, larger on side of suture, which is clearly traceable, ending in a pointed apex; color dull yellow, with dark red cheek in sun; down thick; cavity deep, abrupt, shouldered; pit small, free.



LONGHURST.

FLESH: color yellow, red at pit; texture tender, almost buttery, moderately juicy; flavor vinous, sweet, agreeable.

QUALITY: dessert, fair; cooking or preserving very good.

VALUE: market second class, unless unusually well grown.

SEASON: late September to early October.

LEMON CLING.

A large and showy peach, at one time planted freely in Ontario orchards, but of late discarded because of its cling stone.

ORIGIN: South Carolina.

TREE: vigorous, hardy and productive.

FRUIT: large, form roundish, narrowed towards apex, which is large and prominent, somewhat like that of the lemon; skin deep yellow, with a dark brownish-red cheek.

FLESH: color yellow, tinged with red at the pit; texture firm, not very juicy; flavor pleasant, sprightly, subacid.

QUALITY: dessert fair; cooking, fair.

VALUE: market second class.

SEASON: late September.

LEWIS.

A fine market peach to succeed St. John and to precede Early Crawford.

ORIGIN: Michigan.

TREE: healthy, vigorous, very productive.

FRUIT: medium to large; form round; color yellowish white, largely overspread with red; suture depressed.

FLESH: yellowish white, red next the pit; texture tender, juicy; flavor very pleasant.

QUALITY: dessert good; cooking good.

VALUE: home market first class; distant market second class.

SEASON: mid September.

McCONNELL

A very attractive looking, late, white flesh peach.

ORIGIN: a seedling raised by Mr. McConnell, Essex County.

TREE: a good thrifty grower; productive.

FRUIT: above medium; color white with beautiful crimson blush; form round.

FLESH: cling; color pure white; texture firm, juicy; flavor pleasant.

QUALITY: dessert poor; cooking poor; good pickler.

VALUE: not tested.

SEASON: mid October.

MATTHEW (*Matthew's Beauty*.)

A fine attractive appearing yellow peach, with beautiful cheek, resembling Elberta in exterior, but nearly a week later, and of much better quality. From its appearance it might be called "late Elberta."

FRUIT: form roundish ovate, slightly flattened; size about 2½ inches; color yellow with dark red cheek; suture half round; apex depressed; cavity narrow, deep.

FLESH: free; color yellow; texture moderately firm; flavor sweet, good.

QUALITY: dessert or cooking, very good.

VALUE: market first class.

SEASON: late September to early October.

MOUNTAIN ROSE.

Desirable in the home garden as a dessert peach.

ORIGIN: New Jersey.

TREE: vigorous; productive.

FRUIT: size medium to large; form roundish; suture traceable; apex a point; color of skin white, with bright red cheek.

FLESH: creamy white, with red tint at the pit; texture tender, melting, very juicy; flavor sweet, delicious; free.

QUALITY: first class for dessert.

VALUE: market second class.

SEASON: early to mid September.

NEW PROLIFIC.

A peach of the Crawford type, a few days later, which is highly esteemed by many peach growers. Like the Crawford it is too tender in flesh for distant shipment, unless picked from the tree before it reaches full maturity.

TREE : healthy ; vigorous ; productive.

FRUIT : size medium to large, form round ; color yellow, with bright red cheek ; cavity narrow and deep ; suture, distinct, extending beyond the apex.



NEW PROLIFIC.

FLESH : yellow ; slightly tinted with red at the pit ; texture tender, flavor sweet, delicate, very pleasant ; free from pit.

QUALITY : dessert first class ; cooking first class.

VALUE : home markets first class.

SEASON : mid to late September.

OLDMIXON FREE.

An old standard variety considerably planted in the older commercial peach orchards of the Niagara Peninsula to succeed the Early Crawford ; a white flesh peach with a red cheek presenting a good appearance in the basket ; its fault as a market variety is its dropping almost before it attained full color and its tender flesh ; valuable for dessert purposes.

ORIGIN : a seedling of Oldmixon Cling which was brought to America by Sir John Oldmixon.

TREE : vigorous ; spreading ; moderately productive.

FRUIT : medium to large ; form roundish oval, one-sided, suture distinct toward the apex which is not marked ; cavity narrow, color creamy white, marbled with red and with a deep red cheek ; bloom thin.

FLESH : free from pit ; color creamy white, red at pit ; texture tender ; flavor sweet, rich, vinous.

QUALITY : dessert very good ; cooking or canning whole, very good.

VALUE : market hardly first class compared with larger yellow varieties of the same season.

SEASON : early September.

RIVERS (*Early Rivers*).

When first introduced, this peach was widely planted for market because of its fine size and early season, coming in between Alexander and Hale. Its great fault is its delicate



RIVERS.

skin and tender flesh which show the slightest bruise, so that the most careful handling is necessary. The fruit needs thinning for size and color, and then it can be sent only to the nearest markets.



SECTION OF RIVERS.

ORIGIN: by Thos. Rivers, of Sawbridgeworth, England.

TREE: very vigorous; fairly hardy; very productive.

FRUIT: medium to large, roundish, often somewhat oblong and flattened on the sides, and more or less one-sided; skin smooth, light green, almost white, delicately shaded with red; cavity small and deep; apex small in a narrow, deep depression; suture deep and distinct; stone half cling, inclined to split.

FLESH: color creamy white; texture melting, juicy.

QUALITY: fair for dessert; fair for cooking.

VALUE: second class for near market.

SEASON: mid August

REEVES FAVORITE.

A profitable peach because of its large size and excellent color, but lacking in productiveness.

ORIGIN: in New Jersey, by Samuel Reeves.

TREE: thrifty; upright; moderately productive.

FRUIT: large, form roundish; color yellow with red cheek; cavity deep and broad; suture traceable; apex pointed, distinct.



REEVES FAVORITE.

FLESH: color yellow, with red tint at the pit; texture tender, juicy; flavor sweet, vinous, very pleasant; free.

QUALITY: dessert good; canning or cooking good.

VALUE: market first class.

SEASON: mid September; a few days later than Early Crawford.

REID.

A round yellow flesh peach, closely succeeding Elberta.

TREE: healthy, vigorous, productive.

FRUIT: medium to large in size; form roundish ovate, color yellow nearly covered with red; suture distinct; apex depressed, prominent.

FLESH: free; color yellow marked with red at pit; texture tender, juicy; flavor moderately sweet.

QUALITY: cooking good; dessert fair.

VALUE: market second class.

SEASON: late September.

SALWAY.

A popular late market variety, which usually ripens in the peach sections of Ontario before frost. Hilborn says that in Essex it reaches maturity four years out of five.

ORIGIN: England.

TREE: vigorous; productive; fairly hardy.

FRUIT: large; roundish, somewhat one-sided; skin yellow with red cheeks on sunny side; suture broad.

FLESH: free; color yellow, red at the pit; texture tender, juicy; flavor sweet, good.

QUALITY: good.

VALUE: market first class if well ripened.

SEASON: mid October.

ST. JOHN.

(Yellow St. John.)



ST. JOHN.

FLESH : color yellow, tinted red at the stone; texture tender and juicy; flavor sweet rich and agreeable.

QUALITY : dessert and cooking very good.

VALUE : market first-class, the best of its season.

SEASON : Late August.



SECTION OF ST. JOHN.

SMOCK.

A first class late market peach.

ORIGIN : New Jersey.

TREE : moderately vigorous; wood brittle; leaves not subject to curl; productive. **FRUIT :** large; oval; color yellow with orange red cheek; bloom heavy; cavity narrow and deep; suture obscure; apex slightly extended.

FLESH : free; color yellow, with red at pit; texture dry, tender; flavor agreeable, not sweet, distinctive.

QUALITY : cooking or drying good.

VALUE : market first class for its season.

SEASON : early October.



SMOCK.

SNEED.

A promising early variety for home use and near markets.

ORIGIN : Tennessee, by Judge Sneed of Memphis, about 1880, from a pit of the Chinese Cling.

TREE : vigorous, but slender in young growth ; productive ; an early bearer.

FRUIT : medium ; form roundish oval, slightly one-sided ; skin light greenish white, with red cheek, and a short thick down : cavity narrow and deep, with distinct suture, and a small pointed apex, in a slight depression.



SNEED.

FLESH : semi-cling ; color yellowish white at maturity : texture tender, fine, very juicy ; flavor mild, vinous, pleasant.

QUALITY : dessert good.

VALUE : home market second class ; distant market useless.

SEASON : Late July to early August.

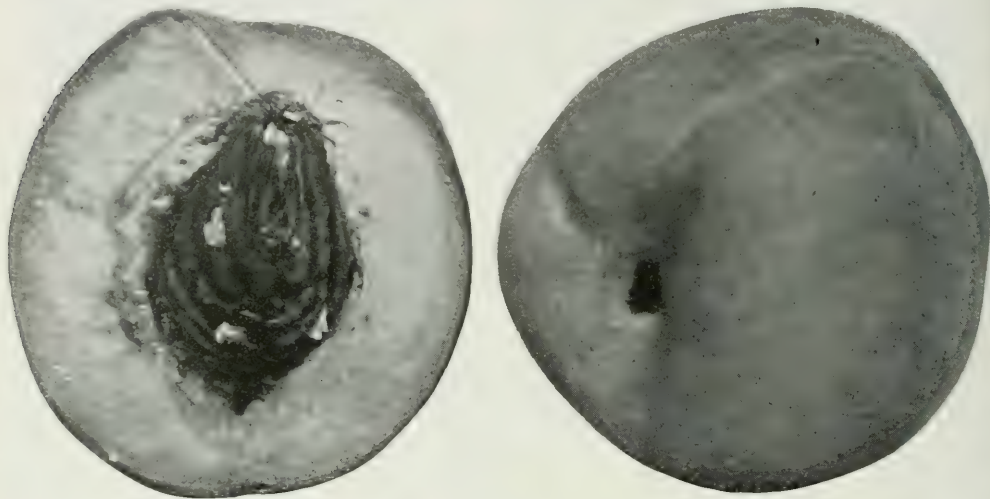
STEVENS. (*Stephens Rareripe*).

A popular late white flesh peach, and a good shipper.

ORIGIN: New Jersey.

TREE: vigorous and productive.

FRUIT: size above medium; form roundish ovate; color whitish ground with dark red cheek; cavity narrow and deep; suture traceable.



STEVENS.

FLESH: whitish with red at pit; free; texture tender, juicy; flavor sprightly and agreeable.

QUALITY: dessert good; cooking good.

VALUE: market first class.

SEASON: mid October.

THURBER.

A magnificent white flesh peach to fill in between Early Crawford and Elberta.

ORIGIN: seedling of Lee, raised by Dr. L. E. Berckmans of Augusta, Georgia.

TREE: very vigorous; productive.

FRUIT: size large; form roundish, enlarged at centre along suture; color creamy white, bright red cheek; cavity large, deep; suture marked; apex small, pointed; bloom white; skin thin.

FLESH: white, red at pit, free; texture tender, juicy; flavor sweet, vinous, excellent.

QUALITY: dessert very good to best; cooking or canning very good.

VALUE: home market first class.

SEASON: mid September.

TRIUMPH.

A valuable commercial variety, to follow the Alexander, but not very popular on account of its heavy coat of down, its dull color, and its susceptibility to rot.

ORIGIN: Georgia, seed of Alexander.

TREE: vigorous, hardy, very productive, subject to twig blight and leaf curl.

FRUIT: medium size; form roundish, somewhat shouldered and flattened; color yellow ground nearly covered with red and markings of very dark red; cavity deep; apex small, in a decided depression; suture distinct; pit semi-cling.

FLESH: yellow; texture fine, juicy; flavor sweet, rich and excellent.

QUALITY: good.

VALUE: home market second class except under special conditions.

SEASON: mid August

TYHURST.

A very attractive golden-yellow peach ; considered a profitable variety for the commercial orchard. After fruiting it several years at our Maplehurst station, we think its value has been somewhat over-estimated.

ORIGIN : a seedling raised by Mr. Tyhurst, of Leamington, Essex County. This gentleman was so pleased with the peach that he planted nearly his whole farm with trees grown from its pits, and made considerable money out of his venture.

TREE : moderately vigorous ; quite productive ; fruit is inclined to drop as soon as ripe.

FRUIT : size medium ; form ovate ; suture distinct on one side, terminating in a small black sharp point ; color deep yellow, with tinge of red in the sun ; skin separates easily from the flesh.

FLESH : free ; color pale yellow ; texture very tender, fine grained, melting, juicy ; flavor excellent.

QUALITY : dessert very good to best ; cooking very good.

VALUE : home market first class ; distant market second class because too tender.

SEASON : mid September.

WHEATLAND.

A large and beautiful yellow flesh peach to follow Early Crawford ; a valuable variety for home use or market ; not a long keeper.

ORIGIN : New York State.

TREE : vigorous.

FRUIT : size large ; form roundish, slightly enlarged along the line of suture ; color yellow, well overspread with red, usually prettily dappled with red about the small pointed apex ; cavity broad and deep.



WHEATLAND.

FLESH : free ; color pale yellow tinted with red at the pit ; texture melting, tender, juicy ; flavor rich, sweet, delicious.

QUALITY : very good for dessert or cooking.

VALUE : market first class

SEASON : mid to late September.

WILLETT.

An attractive and profitable late market peach, to come in between Elberta and Smock; later than Matthews' Beauty.

TREE: vigorous; spreading; productive.

FRUIT: medium to large in size; form nearly round, and enlarged along one side of the suture; cavity abrupt, medium; apex distinct; color yellow with mottling of deep red in the sun.



WILLETT.



SECTION OF WILLETT.

FLESH: free; greenish yellow, with red tint at the pit; texture rather firm, moderately juicy; flavor moderately sweet, good.

QUALITY: dessert good; cooking very good.

VALUE: market first class

SEASON: early October.

WONDERFUL.

A new variety of great size and beauty.

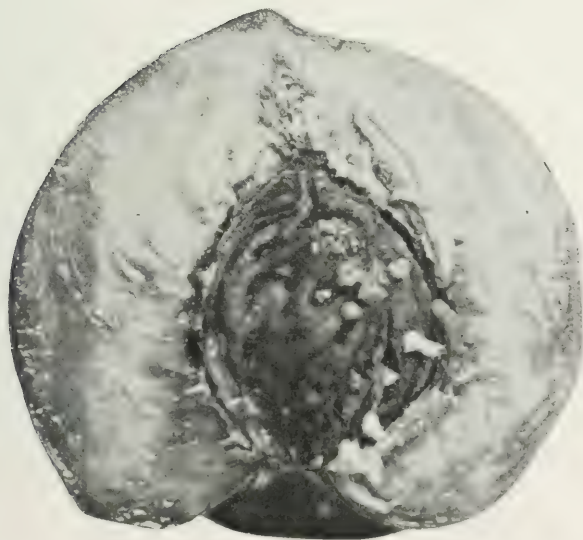
ORIGIN: United States.

TREE: a vigorous grower; but lacking in productiveness.

FRUIT: large; form roundish; cavity narrow and deep; suture traceable; apex a small point, sometimes depressed; color yellow with bright red on sunny side.



WONDERFUL.



SECTION OF WONDERFUL.

FLESH: light creamy yellow, red at pit; texture tender, melting, juicy; flavor sweet, vinous, pleasant; free.

QUALITY: dessert good; cooking good.

VALUE: market first class.

SEASON: mid September.

THE PEAR.

The pear succeeds all over the best apple districts of Ontario, but few good hardy varieties have yet been found, hence the commercial culture of the pear does not extend as far north as the apple. The principal pear orchards are found in southern Ontario. There are many good orchards, however, along Lake Ontario as far east as the Bay of Quinte and north to the Georgian Bay.

In eastern Ontario, only a few kinds succeed, and these are not planted on a commercial scale. These hardy varieties are grown to a limited extent for home use as far north as latitude 45 degrees and some of the Russian pears, though inferior in quality and very subject to blight, may be grown still further north.

The pear stands distant shipment well if picked at the right time, and properly packed and handled in transit, and hence larger quantities are being sent to distant markets every year, and as a rule good prices are obtained for the fruit.

The general directions for the preparation of the land, soil and planting as given for the apple apply to the pear, with but slight alterations. While pears succeed in the same kind of soils as the apple, clay loams, if well drained, suit them best. Pear trees two years old are better than those three years old, as they are easier to transplant, since pear trees have not so good a root system as the apple. Standard trees should be set at least twenty feet apart each way. Pear trees are shaped and pruned much like the apple, although trees with a central leader are easier obtained and are preferred. They may be headed nearer the ground than the apple, as they are of more upright habit. Many pears are now being grown on dwarf or quince stock. These have the advantage of being earlier than standard trees, and may be planted closer together, fourteen feet apart being a good distance. They do not live as long as standard trees. The dwarf trees are almost always grown without a central leader in Ontario, and branching near the ground. They require more careful pruning than standards. The fruit of some varieties is improved by growing on dwarf stocks, among those succeeding particularly well on this stock being Duchess, Louise, Diel, and Easter Beurre.

Pear trees are very much subject to blight which as yet cannot be controlled by any practical means. It has been observed, however, that trees usually blight most when making strong succulent growth, hence it is best to not encourage a strong growth. Some varieties are more subject to blight than others, and when planting this should be taken into consideration. In planting a pear orchard, it is also desirable to mix the varieties, avoiding large blocks of any one kind, as better crops will thus be obtained, some varieties being almost sterile when planted by themselves.

The picking of pears requires good judgment. If they are picked too early the fruit will not get its best flavor, but if picked too ripe, it will spoil before reaching the market. Pears, unlike most fruits, ripen well and develop a good flavor when picked while still green and hard, but to obtain this flavor the fruit should have reached its full size.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Commercial: Giffard, Clapp, Bartlett, Boussock, Flemish (hardy, subject to spot). Howell, Louise, Duchess, Bosc, Clairgeau, Anjou, Kieffer.

Domestic: Summer Doyenne, Giffard, Bartlett, Flemish (for the north), Sheldon, Seckel, Bosc, Anjou, Lawrence, Josephine, Winter Nelis.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Niagara District: By Linus Woolverton, Grimsby, Ont.

Commercial: Chambers, Wilder, Giffard, Clapp, Bartlett, Hardy, Bosc, Howell, Louise, Duchess, Pitmaston, Clairegeau, Anjou, Easter Beurre.

Domestic: Doyenne, Manning, Giffard, Boussock, Rostiezer, Marguerite, Sheldon, Seckel, Triumph, Ritson, Louise, Hardy, Diel, Anjou, Lawrence.

Burlington District: By A. W. Peart, Burlington, Ont.

Commercial: Wilder, Clapp, Bartlett, Boussock, Louise, Duchess (dwarf), Anjou, Kieffer, Winter Nelis, Easter Beurre.

Domestic: Wilder, Bartlett, Louise, Anjou, Winter Nelis.

Bay of Quinte District: By W. H. Dempsey, Trenton, Ont.

Commercial and Domestic: Giffard, Tyson, Clapp, Boussock, Hardy, White Doyenne, Dempsey, Bosc, Clairegeau, Goodale, Lawrence, Josephine.

St. Lawrence District: By Harold Jones, Maitland, Ont.

Domestic: Clapp, Flemish, Ritson.

DESCRIPTION OF VARIETIES.

ANSAULT.

Claimed to be a good general purpose pear for home uses, but not as yet widely tested.

ORIGIN : France.

TREE : an early and abundant bearer.

FRUIT : size medium ; roundish oblate pyriform ; skin green, yellowing at maturity, mostly covered with russet ; stem $\frac{1}{2}$ inch to one inch long, in a small irregular, often oblique cavity ; calyx small, open in an abrupt, deep basin.

FLESH : color creamy white ; texture tender, fine grained, buttery, juicy ; flavor agreeable, aromatic, very pleasant.

QUALITY : fair for all purposes.

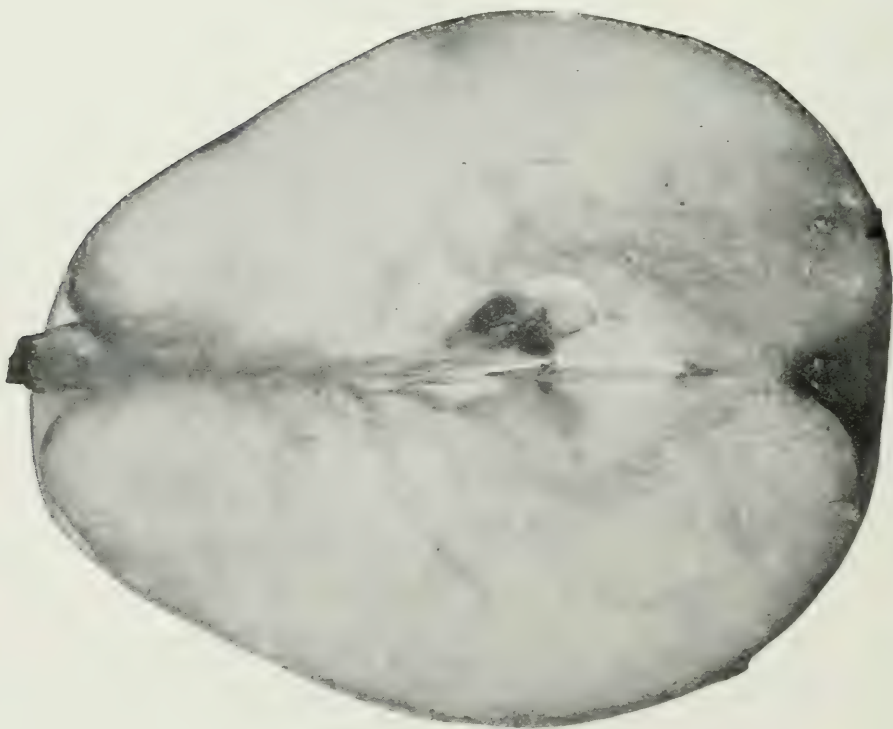
VALUE : home market second class.

SEASON : September.

ANJOU.



SECTION OF ANJOU.



ANJOU.

(*Beurre d'Anjou, Ne Plus Meuris of Le Roy.*)

A fine market pear, succeeding admirably on quince roots, but on pear roots the tree is not so productive, nor the fruit so large. Its fine size, and melting, buttery texture, make it a favorite market pear for the month of December, and past experience proves it a desirable variety to export to Great Britain.

ORIGIN : Louvain, Belgium, about 1823 ; named Ne Plus Meuris, after Father Meuris.

TREE : a vigorous, strong grower ; productiveness scarcely first rate even on the quince, third rate on the pear.

FRUIT : large ; form obovate, blunt pyriform, sides often uneven, and samples not very uniform ; skin thick, yellow at maturity, with greenish patches and brown dots, brownish red on sunny side ; stem scarcely half an inch long, stout and fleshy ; calyx open, set in a shallow basin ; core small, seeds few if any.

FLESH : white ; texture fine grained, buttery, melting ; flavor pleasant, perfumed, not very sweet.

QUALITY : table or cooking good.

VALUE : home market first class ; foreign market first class.

SEASON : November.

ADAPTATION : succeeds best south of Toronto.

BAUDRY.

A promising new winter pear, which has been fruiting at our Maplehurst station as a dwarf.

FRUIT : size large ; form oblong, pyriform ; color yellowish green, with russet patches.

FLESH : color yellow ; texture tender, but gritty at the core ; flavor very good.

QUALITY : very good for dessert and cooking.

VALUE : apparently first class for market.

SEASON : late winter.

9 F.O.



BARTLETT.

ORIGIN: Berkshire, England, 1770, propagated by Mr. Williams, near London. Introduced into America and disseminated by Enoch Bartlett of Boston.

TREE: healthy, vigorous, half-hardy, overcomes blight better than most varieties, very productive.

FRUIT: large, oblong, obtuse, pyriform; color yellow, with very numerous minute brown dots, often russeted at the apex; stem $1\frac{1}{4}$ inches long, in a small irregular cavity; calyx, open in an irregular basin.

FLESH: creamy white, fine grained, very buttery and juicy; flavor sweet, perfumed, vinous.

QUALITY: dessert, [very good; market, best.

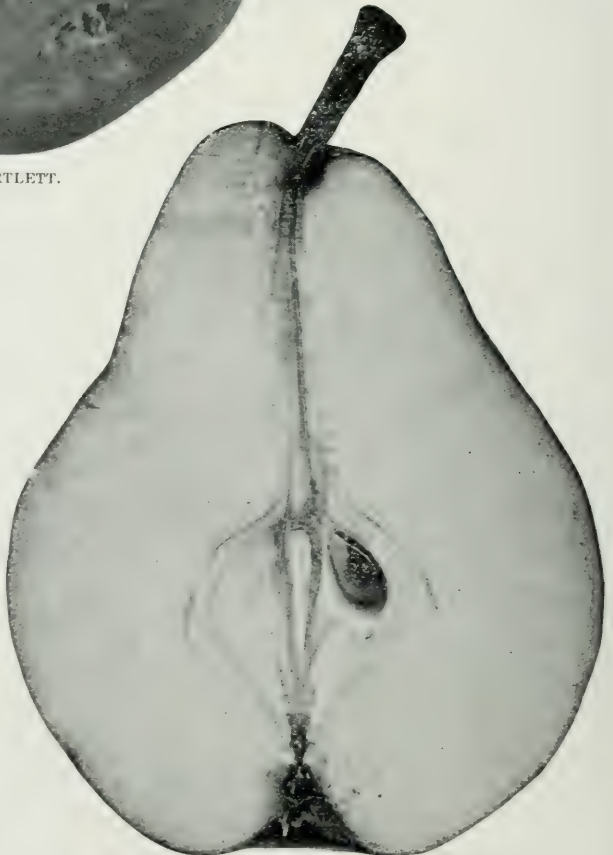
SEASON: early to mid September.

Adaptation: succeeds admirably in southern Ontario, and as far north as our Bay of Quinte station.

9a F.O.

BARTLETT (*Williams'*
Boncretien).

No pear of the same season equals in popularity the Bartlett, for either dessert or canning. Indeed, while it is in the market, no other pear compares with it in price or brings as much profit to the grower. Of late large orchards of this one variety have been planted in Canada, and there is a growing demand for it in the Northwest Provinces. With trustworthy cold storage it may be exported to Great Britain with profit.



SECTION OF BARTLETT.

BOSC.

(Beurre Bosc, *Downing*.)

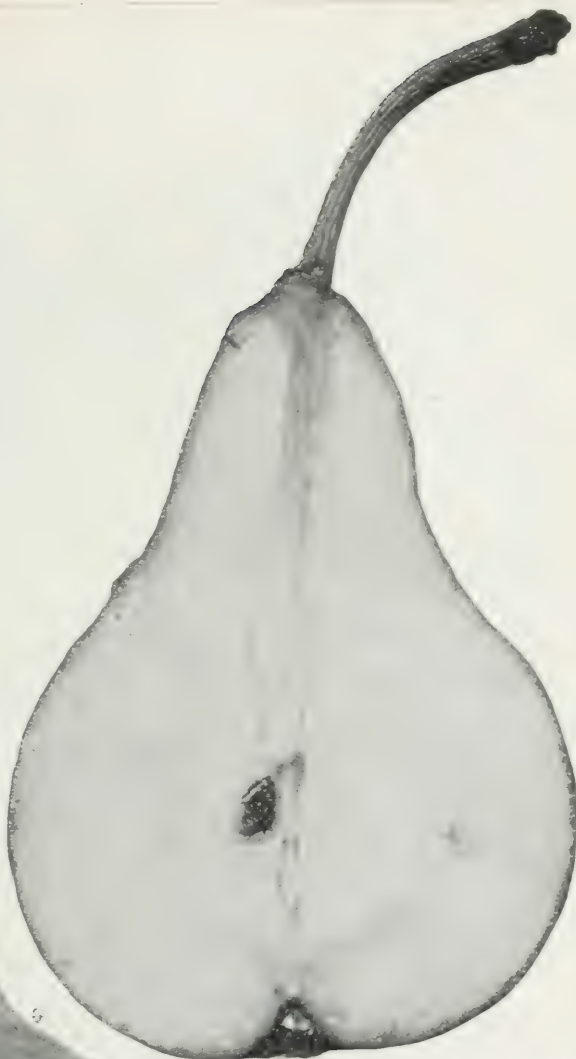
The Bosc pear is not as widely known among cultivators in Canada as its merits deserve. Though a russet, it yellows as it ripens; the pear is large in size, and uniform on the tree as if thinned purposely; and the texture is such that it can be exported in fine condition. In quality, a well grown Bosc is first-class. On the whole, we would place this pear among the valuable kinds for planting for export to the foreign markets.

ORIGIN: a chance seedling found in France, and dedicated to M. Bosc, the eminent director of the Jardin des Plantes at Paris, about the year 1835.

TREE: a vigorous grower, and a regular bearer, carrying its fruit singly



Bosc.



SECTION OF BOSC.

and not in clusters as is the habit of some varieties.

FRUIT: large, elongated acute pyriform, covered with slight indentations; color greenish, yellow ground nearly covered with cinnamon russett; stalk $1\frac{1}{2}$ to 2 inches long, stout and usually curved, inserted without a cavity; calyx open in a shallow basin.

FLESH: white; texture, fine, breaking, juicy; flavor, sweet, rich, delicious.

QUALITY: first-class for dessert.

VALUE: first-class for either home or foreign markets.

SEASON: October.

ADAPTATION: southern Ontario, and as far north as Bay of Quinte.

BOUSSOCK (*Doyenne Boussock*).

BOUSSOCK.

FRUIT : large ; form roundish, obovate ; skin yellow, with dull red cheek, and numerous rough dots ; stalk fleshy, stout, 1 to 1½ inches in length, in a round cavity ; calyx open, in a shallow russeted depression.

FLESH : white ; texture tender, juicy, if gathered at the right season ; flavor sweet and agreeable.

QUALITY : dessert very good.

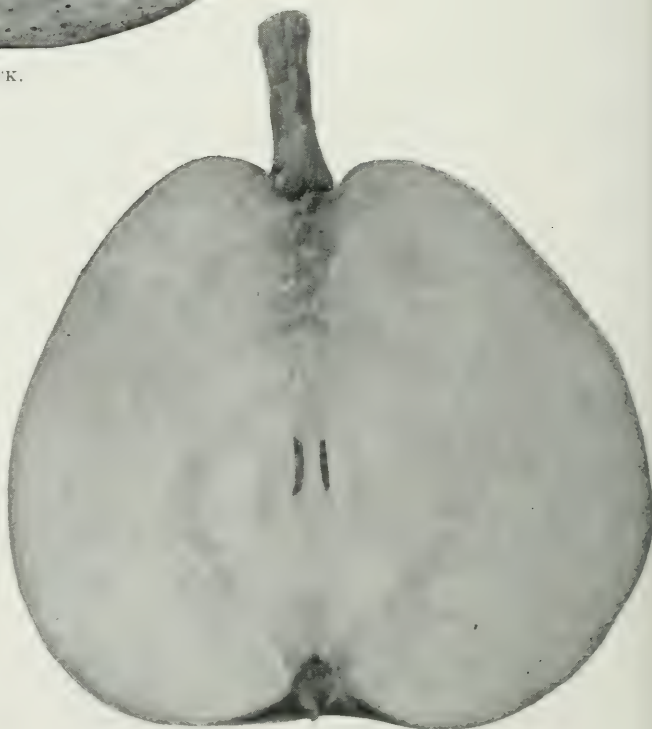
VALUE : near markets first class.

SEASON : September.

Described by Downing as a profitable market sort, but our experience in Canada would lead us to give it a second place when compared with the Bartlett or the Anjou. The tree is a good grower and productive, and the fruit is uniformly large, but it is second class in quality unless eaten just at the proper stage of ripeness, and the tree is inclined to drop its fruit too soon.

ORIGIN : Belgium.

TREE : succeeds best as a standard ; vigorous, hardy and very productive.



SECTION BOUSSOCK.

BRANDYWINE.

A good general dessert pear, but not much grown for market in Ontario, being so nearly of the same season as Bartlett.

ORIGIN : chance seedling found on the banks of the Brandywine river, Delaware County, Pennsylvania. The original tree fruited for the first time in 1820.

TREE : vigorous ; upright ; fairly productive ; succeeds best on the quince.

FRUIT : size medium ; form conic pyriform ; color of skin greenish-yellow, with blush on the sunny side and dotted and sprinkled with russet ; stem $\frac{3}{4}$ to 1 $\frac{1}{4}$ inches long, fleshy at insertion, which is surrounded by folds ; calyx open in a smooth, shallow basin.

FLESH : color white ; texture tender, melting, very juicy ; flavor sweet, vinous, aromatic.

QUALITY : dessert very good.

VALUE : market second class.

SEASON : early September.

BUFFUM.

Formerly this pear was much in favor as a profitable orchard variety, because of its productiveness and the wonderful hardiness and vitality of the tree, but of late years it is much less in favor with pear growers on account of its small size and ordinary quality. Some trees of this variety at Maplehurst, forty years planted, have never shown the slightest tendency to blight, and have attained a great height, more resembling Lombardy poplars than pear trees.

ORIGIN : Rhode Island.

TREE : remarkable for its vigorous, symmetrical, erect habit of growth : it is regularly and fairly productive, but, unless gathered early, the fruit drops badly ; not subject to blight.

FRUIT : medium size, obovate, slight oblong ; skin rough, yellow at maturity, with bright or dull red or russet on sunny side ; dots small, brown ; stalk $\frac{1}{4}$ inch long in a small cavity ; segments of calyx small, in a small plaited basin.

FLESH : color, yellowish white ; texture, crisp, not fine, not juicy ; flavor, sweet and pleasant.

QUALITY : dessert fair ; cooking fair.

VALUE : home and distant markets second class.

SEASON : September.

ADAPTATION : stated to be hardy in Bruce and Huron counties : slightly tender in North Ontario county.

CHAMBERS.

The Chambers pear has been grown at Maplehurst for about ten years on dwarf stock and commends itself as a fine market variety the beginning of August, for it is of a good quality, fairly large, and the tree is productive.

ORIGIN : brought from Maryland to Kentucky by Judge Wm. Chambers.

TREE : moderately vigorous, very hardy, productive.

FRUIT : of medium size ; form obtuse, obovate, pyriform ; color pea green, turning yellow when fully mature, with numerous brown and green dots, and reddish brown cheek on sunny side ; stalk stout, 1 inch long, set on an angle in a flat cavity, often one shoulder prominent ; calyx small, half-open ; seeds few.

FLESH : white ; texture tender, fairly juicy ; flavor aromatic, sweet and pleasant.

QUALITY : good.

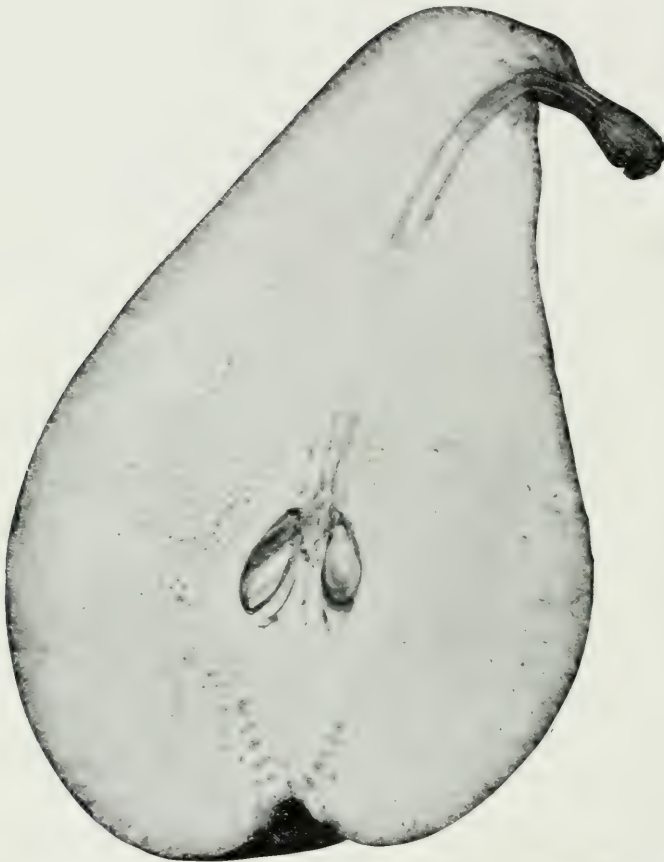
VALUE : for near market first class.

SEASON : early August.



CHAMBERS.

CLAIRGEAU.



As a commercial pear, especially for a distant market, we know of no variety of the same season that is superior to this variety. Its large size, and the beautiful cheek which it takes on during the month of October, its excellent shipping and keeping qualities, all these combine to make it a profitable variety, and one that is easily grown, either as dwarf or standard. The quality is variable according to the conditions of growth; in France it is counted very good; in England, poor; with us, when well ripened, it is only good.

ORIGIN : Nantes, in France with a gardener named Clairgeau, about 1838.

TREE : first-class in vigor, hardiness and productiveness; wood, stout, and upright in habit of growth; branches, numerous, grown as a dwarf can be trained to make a fine pyramid, but succeeds best as a standard; an early bearer.

FRUIT : large, one-sided, pyriform; skin, green, turning pale yellow at maturity, almost overspread with

splashings and dots of russet, which completely cover it about the stock and the calyx; orange red on sunny side; stalk, $\frac{3}{4}$ inch long, stout, fleshy at the base, usually set at an angle with the axis; calyx, small, open, in a shallow furrowed basin.

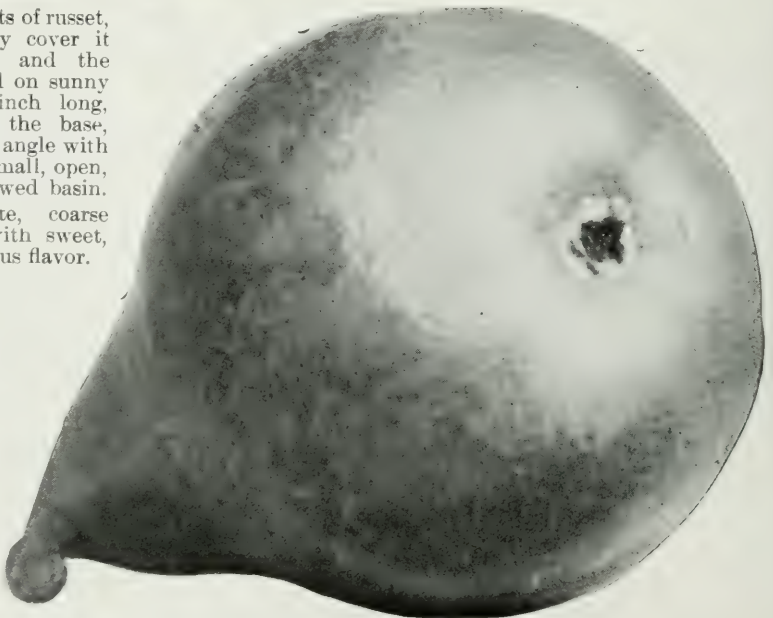
FLESH : white, coarse grained, juicy, with sweet, aromatic and vinous flavor.

VALUE : home or foreign market, first class.

QUALITY : cooking good; dessert good

SEASON : October to November.

ADAPTATION : succeeds admirably as far north as Thornbury; and east as far as Prescott.



CLAPP (*Clapp's Favorite*).

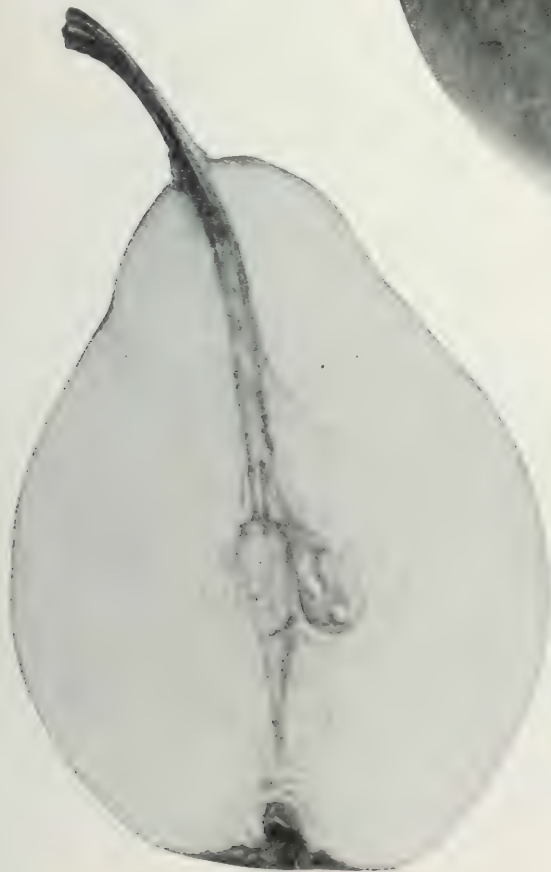
The Clapp is a beautiful pear where well grown and well colored. It is also of good quality, so that it is well fitted to be a profitable market pear; with one fault, that it soon passes out of prime condition, and, if allowed to ripen on the trees, it will rot at the core. On this account the fruit must be gathered as soon as full grown and well colored, and shipped while firm.

ORIGIN: raised by Thaddeus Clapp, of Dorchester, Mass., U.S.

TREE: upright, vigorous grower, somewhat spreading, forming a symmetrical top; bears fruit of uniformly large size, pretty evenly



CLAPP.



SECTION OF CLAPP.

distributed; productive; succeeds well as a dwarf on rich soil; somewhat subject to blight.

FRUIT: very large, pyriform, obovate, usually symmetrical, sometimes with unequal sides; skin pale green, changing to yellowish green, with dull red on sunny side, which becomes bright crimson at maturity, somewhat resembling the coloring of the well-known Louise; stalk stout and fleshy obliquely inserted without cavity; calyx large, half open, in shallow basin.

FLESH: creamy white; texture fine, tender, juicy with very agreeable flavor; good to very good.

QUALITY: good for dessert and cooking.

VALUE: first class for home market.

SEASON: August and September.

ADAPTATION: one of the hardiest pears.

COMICE (*Doyenne de Comice*).

"Tree large, upright. Fruit large, roundish pyriform, or broad obtuse pyriform; cavity shallow, often russeted; stalk short, stout, inclined; basin large, deep, uneven; calyx small, open; color greenish yellow, becoming clear yellow at maturity, often lightly shaded with crimson and fawn in the sun, and with light nettings and patches of russet and numerous russet dots; flesh white, juicy, melting, a little buttery with a fine texture, and sweet, rich, sprightly and aromatic flavor; quality good; season October to November; quite productive." (*Report Mich. Exp. Sta.*)

DEARBORN (*Dearborn's Seedling*).

Previous to the introduction of such choice early varieties as Chambers, Wilder, Giffard and Clapp, the Dearborn was highly commended. Downing calls it, "a very admirable early pear of first quality, succeeding Bloodgood, and preceding Bartlett;" but it is no longer to be commended for planting in the commercial orchard because of its small size. It is now considered only valuable in the garden of the amateur.

ORIGIN: at Boston, Mass., in 1818, by the Hon. H. G. S. Dearborn.

TREE: of moderate vigor; not subject to blight; very productive.

FRUIT: size small, roundish obovate; skin clear yellow with small grey dots, smooth; stem 1 to 1½ inches long, inserted with little or no cavity; calyx open in shallow basin.

FLESH: creamy white; texture tender, buttery, juicy; flavor agreeable.

QUALITY: dessert fair; cooking, good.

VALUE: market third-class.

SEASON: mid to end of August.

DEMPSEY.

The Dempsey was originated near Trenton in Prince Edward County, by Mr. P. C. Dempsey, the late well-known Director of our Association for that district. It was produced from a seed of a Bartlett, fertilized with Duchess d'Angouleme. The fruit is firm and consequently would ship well.

TREE: vigorous and productive.

FRUIT: large, oblong, obovate, pyriform; skin smooth, yellowish-green, with brownish-red cheek in sun; stem about 1 inch long, set in a fleshy base, and with almost no cavity; calyx nearly closed in a moderately deep uneven basin, core small.

FLESH: white, fine grained, tender, almost melting, with sweet, delicious flavor.

SEASON: late October to November.

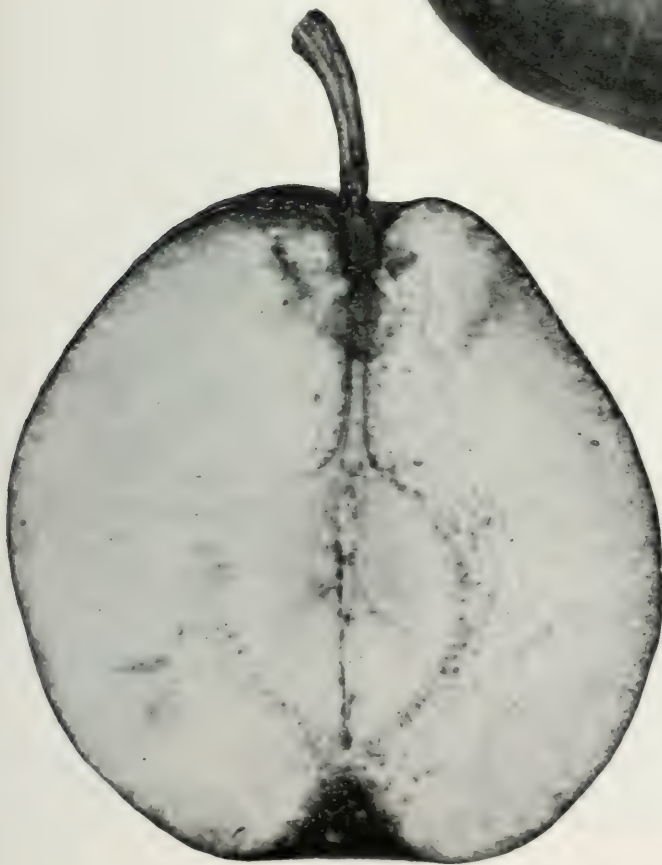
DIEL. (*Beurre Diel.*)

A pear of ordinary appearance as grown in Southern Ontario, but of such size and excellent quality that it deserves a place in every collection, whether for home use or market.

ORIGIN: a chance seedling near Brussels, Belgium, named in honor of Dr. Diel, a German pomologist.

TREE: very vigorous, hardy and productive.

FRUIT: large to very large: ob-ovate; stem pale green, turning yellow at maturity, with numerous large brown dots and patches of russet; stem curved, stout, from 1 to 1½ inches long, set in an open uneven cavity; calyx open, in a basin of moderate depth and not very regular.



FLESH: cream color; texture moderately fine, except at the core, juicy, buttery; flavor aromatic, sweet and when well grown and well ripened, very delicious.

QUALITY: dessert very good.

VALUE: home market, second class, because lacking in color; foreign market, possibly first class, because it carries well and has fine flavor, but not yet tested in this respect.

SEASON: November just preceding the Lawrence.

DROUARD (*President Drouard.*)

"Large, roundish ovate, obtuse, rather irregular; color yellow, with nettings and washings of russet; stalk quite stout, inserted in a deep, narrow, irregular cavity; flesh creamy white, tender, buttery, sweet, perfumed; good. An autumn variety much liked in Michigan and east of the lakes. Europe." (*American Horticultural Manual.*)

DUCHESS.

(*Duchess d'Angoulême of LeRoy and Downing; Angoulême of American Pomological Society; Duchesse, common name in France.*)

For many years this pear has been counted among the best and most profitable varieties in Ontario, especially when grown on quince stock, and, in consequence has been largely planted. Prime samples are excellent stock for export, carried in cold storage. The fruit is often knotty from curculio stings.

ORIGIN: Angers, France, in 1812, a chance seedling. In 1820 Andusson, the propagator, sent a basket of the fruit to the Duchess d'Angoulême, who authorized him to bestow her title upon the pear as its name.

TREE: a strong grower, succeeds best on the quince; variable in productiveness; not subject to blight.

FRUIT: exceedingly variable in size, sometimes weighing a pound and a quarter; form obovate, large at the base; surface uneven, sometimes knobby; skin light green, patched with russet, and numerous grey dots; stalk stout, curved, 1 inch long, often swollen at point of attachment, deep set in an irregular cavity; calyx small, closed, in an uneven, often russeted basin.

FLESH: white; texture fine when well grown, but often coarse grained, melting, juicy and, when properly matured, of a sweet and very good flavor.

QUALITY: dessert very good; cooking good.

VALUE: first class for either home or foreign market.

SEASON: October and November.

ADAPTATION: hardy in southern Ontario, but only half hardy in Grey, Bruce and York.



SECTION OF DUCHESSE



DUCHESSE

EASTER BEURRE.

Among the desirable pears to grow for export we must not overlook the Easter Beurre, which, though green and unattractive in appearance at time of harvesting, keeps well through the winter, is an excellent shipper and is very good in quality. A warm climate and favorable soil seems to be necessary to its best development, and accordingly we find it planted for commercial purposes in the Californian pear orchards. On deep, rich sandy loam, in the southern parts of our Province, it succeeds well, either as a dwarf, or as a standard tree.

Although some writers have claimed that this pear originated in France, because some old trees were found near Laval, yet the majority agree that the variety originated in Belgium, at the old University town of Louvain. Van Mons, in his *Album de Pomologie* in 1847, says, "This variety was found in the ancient gardens of the Capucins, at Louvain, where the original tree still stood in the year 1825, under the name of *Pastorale de Louvain*."

In the old countries much confusion has existed regarding the names of pears, and subsequently much difficulty exists in the identification of varieties: this pear, for example, is given no less than twenty-four different names in LeRoy's *Dictionnaire de Pomologie*, as, for example, *Doyenne de Printemps*, *Canning*, *Beurre d'Hiver*, etc., the last being adopted by LeRoy; while Hogg, of England, and Downing, of America, both adopt the name so well known to us, *Easter Beurre*.

TREE: fairly vigorous, upright and productive, and may be grown either as a dwarf or as a standard tree; if as a standard, it needs good, rich soil and a warm climate for the best success. In Great Britain it does not seem to succeed so well as in Canada, for Hogg says it frequently happens that this delicious pear is of an indifferent and insipid flavor, which is caused by the unfavorable soil; and Blackmore, of Teddington, says, "It cracks in spots and is seldom very good." Our experience with it, as grown on a dwarf tree, is favorable.

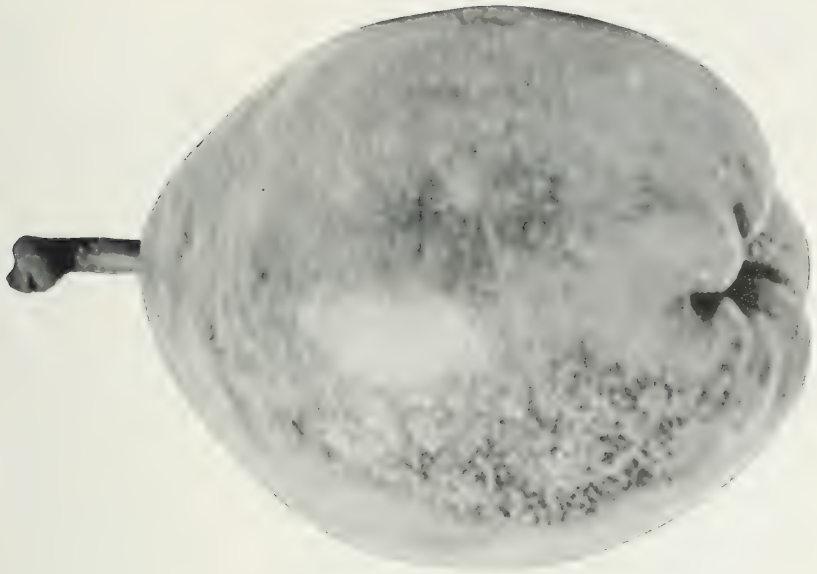
FRUIT: above the medium size, irregular obovate; skin pale green at harvesting time, yellowing somewhat toward maturity, with numerous russet dots, russet patches around the stem and calyx, and often a brownish cheek; stem about 1 inch long, stout, swollen at the base, set in a narrow, deep cavity; calyx small, closed, set in a much plaited basin of moderate depth.

FLESH: white, fine in texture, melting and juicy; flavor sweet, rich and agreeable.

QUALITY: dessert good.

VALUE: export first class.

SEASON: mid to late winter.



EASTER BEURRE.



SECTION OF EASTER BEURRE.

FLEMISH BEAUTY (*Feodant des Bois. of LeRoy.*)

FLEMISH BEAUTY.

almost first in productiveness; an early bearer.

FRUIT: large, form obovate, obtuse, pyriform; skin light yellow when ripe, with frequent patches of brownish red on sunny side, with scattered minute dots; stalk 1 to 1½ inches long, set in a narrow, deep cavity; calyx open, segments short, in a small round basin.

FLESH: creamy white, melting, buttery, juicy; flavor rich, sugary, delicious.

QUALITY: first class.

VALUE: first class where well grown, but counted second class on account of its being subject to scab.

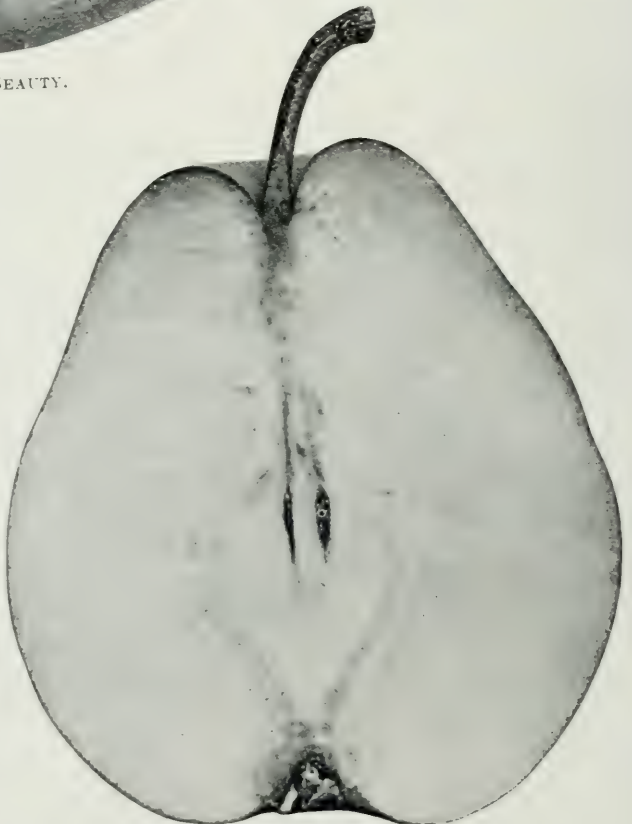
SEASON: mid to late September; should be gathered before quite ripe or it will drop and waste.

ADAPTATION: quite general; probably the hardest good pear.

A variety that has been a great favorite in Europe ever since the beginning of the eighteenth century, as is evidenced by the thirty-five synonyms which have been given it as shown in "Dictionnaire de Pomologie" by Andre LeRoy. This and the Bartlett were among the first imported varieties of pears planted in Ontario, and it has been widely tested. In the northern sections where it succeeds, it is a most popular variety, but in southern Ontario it has been of late so subject to scab and cracking of the fruit, that it has lost favor with growers, notwithstanding its excellent quality.

ORIGIN: discovered by Van Mons about the year 1810 in Eastern Flanders, and distributed among his friends.

TREE: first class in hardiness;



SECTION OF FLEMISH BEAUTY.

GIFFARD (*Beurre Giffard*).

A very desirable commercial pear for the home market.

Origin : a chance seedling about 1840, in the garden of M. Giffard, Angers, France.

TREE : fairly vigorous ; a straggling grower ; healthy ; fairly productive.

FRUIT : size, medium to large : form pyriform conical : color light green, with red dots and



GIFFARD.



SECTION OF GIFFARD.

marbling of red on the sunny side ; stem 1 inch long, stout, swollen at the base, set obliquely : calyx half closed, in small, shallow basin.

FLESH : color white ; texture melting, juicy ; flavor vinous, perfumed.,

QUALITY : Dessert very good ; cooking best.

VALUE : first-class for home market.

SEASON : early to mid August.

GOODALE.

A very good late fall pear: promising as a market variety.

ORIGIN: seedling raised by F. Goodale, Saco, Maine.

TREE: very vigorous and hardy and uniformly productive.

FRUIT: large, obovate obtuse pyriform; color green, yellowing at maturity, with crimson cheek, some russet patches, and some small brown dots: stem about 5-8 of an inch long, set in an inclined cavity; calyx small, closed, in a small, rather deep basin.



GOODALE.

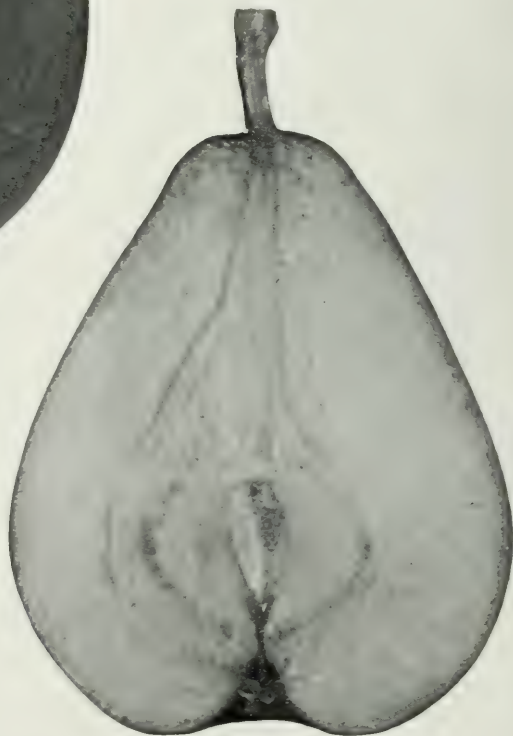
FLESH: color white; texture fine, juicy, granular at core; flavor sweet, pleasant, perfumed.

QUALITY: dessert fair.

VALUE: market first class.

SEASON: October.

ADAPTATION: succeeds as far east as Bay of Quinte District.



SECTION OF GOODALE.

HARDY (*Beurre Hardy*.)

A good variety for the month of October, for both home use and market.

ORIGIN : Boulogne, France, dedicated to M. Hardy, director of the gardens at Luxembourg.

TREE : fairly vigorous and productive, and forms a fine symmetrical tree, especially when grown on the quince. The fruit is uniform in size and the skin is a bright clear russet.

FRUIT : medium size, form obovate, obtuse pyriform, of smooth regular outline ; skin yellowish green, with numerous russet dots and covered with light brown russet, especially at



HARDY.

the ends : stem about 1 inch in length, stout, with fold at the base, and inserted obliquely in a small depression : calyx large, open, in a shallow basin : flesh white, fine grained, buttery, juicy, with rich aromatic flavor.

QUALITY : dessert very good ; cooking good.

VALUE : home market first class.

SEASON : October.

10 F. O.

HOWELL.

A good export pear for southern Ontario. Its vigor of tree, regularity of bearing, clear skin, and good size and quality make it a desirable variety for the commercial orchard.



HOWELL.

ORIGIN: New Haven, Conn. Named after the originator, Thomas Howell.

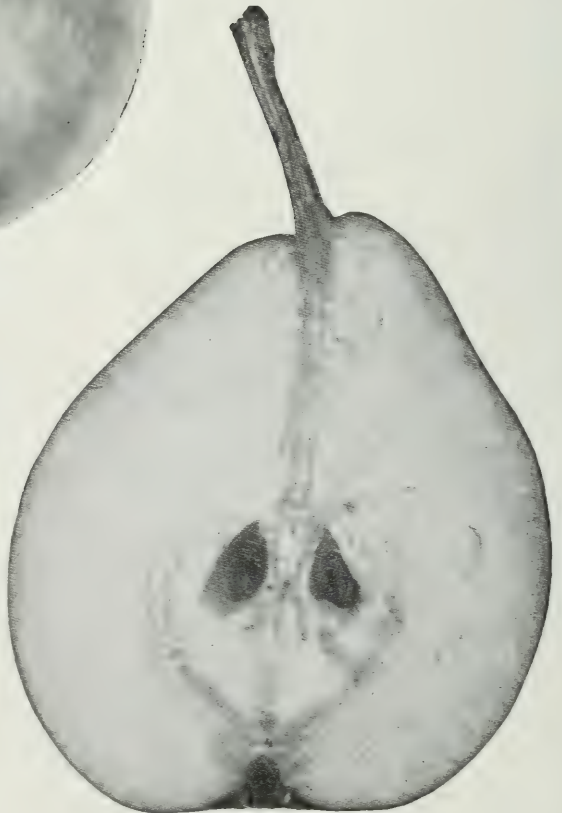
TREE: upright, healthy and vigorous, an early bearer, productive.

FRUIT: large, obovate pyriform; skin yellowish green, waxy reddish dots on sunny side, russet dots in shade; stem $1\frac{3}{4}$ inches long, set on an acute base, without cavity, sometimes lipped; calyx partly open in a deep russeted basin; core small; seeds few, small.

FLESH: creamy white, juicy, melting, granular near the core; flavor agreeable, vinous; a little tart.

VALUE: first class for all markets.

SEASON: mid September to mid October.



SECTION OF HOWELL.

HOOSIC.

This promises to be an excellent commercial variety, with one fault, viz., its short season.

ORIGIN : seedling from Hacon's Incomparable, by Asahel Foote, of Williamstown, Mass.

TREE : on quince stock, healthy, vigorous and productive.

FRUIT : size large to very large : form obtuse pyriform, somewhat one-sided : skin yellow, with light red in sun, and with russet dots ; stem $1\frac{1}{2}$ inches long, stout, curved, set in a small irregular cavity ; calyx small, open, set in a broad, uneven basin.

FLESH : white ; texture tender, fine and moderately juicy ; flavor rich, perfumed.

QUALITY : good for all purposes.

VALUE : first class for near market.

Grown at Maplehurst, as a dwarf, this pear has given the greatest satisfaction : and, only that its season is rather short, it would be commended as an export variety.

SEASON : late September.

JOSEPHINE. (*Josephine de Malines*).

An excellent winter pear.

ORIGIN : Belgium.

TREE : succeeds well on the quince stock ; productive.

FRUIT : size medium, oblate conical ; color yellowish with small dots ; stem often two inches long in a slight cavity ; basin large.



JOSEPHINE.

FLESH : color yellowish white ; texture buttery ; flavor rich and peculiar.

QUALITY : dessert very good.

VALUE : market second class.

SEASON : midwinter.

KIEFFER.

There is perhaps no pear about which a greater diversity of opinion exists : some fruit men condemning it because of its lack of quality, and others insisting that its beauty of

appearance, its enormous productiveness, and its wonderful health and vigor of tree make it a profitable market variety, and that when properly grown and ripened it is quite a desirable kind, especially for cooking. Certainly the tree surpasses every variety in our collection for productiveness and vigor of growth ; while the fruit is always uniformly perfect in form, free from blemishes, and, when the tree is cultivated and manured, large in size.



KIEFFER.

ORIGIN : by Peter Kieffer, Roxbury, Pa., a seedling of Chinese Sand pear.

TREE : wonderfully vigorous and healthy ; an early and extraordinary bearer, often being laden with fruit after two years planting.

FRUIT : medium to large ; form ovate, tapering at both ends, widest at middle, and narrowest towards stem ; skin light golden yellow, with bright cheek, and very numerous brown russet dots ; stalk one inch long, fairly stout, in a one-sided cavity ; calyx half open, in a medium sized irregular basin.

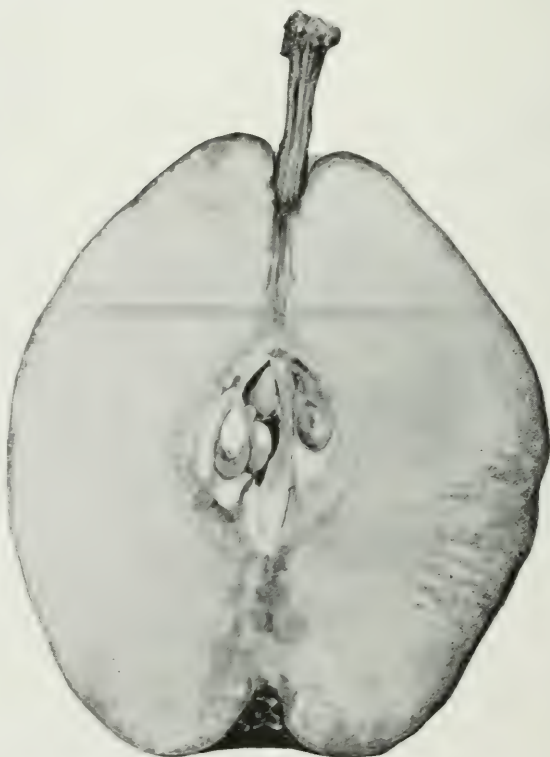
FLESH : yellowish white ; texture half tender, half melting, not very fine, juicy ; flavor moderately sweet, poor.

QUALITY : dessert very poor ; for cooking good ; valuable for canning.

VALUE : second class for all markets.

SEASON : October to January.

ADAPTATION : very general.



SECTION OF KIEFFER.

KOONCE

Ordinary in its appearance, and only medium in size, but on account of the productiveness of the tree it is considerably planted in Illinois for kitchen and market.

ORIGIN : Illinois.

TREE : hardy, healthy and productive.

FRUIT : medium in size ; form obovate pyriform ; color of skin greenish yellow with small russet dots ; stem stout, 1 inch long inserted in a medium sized, shallow cavity.

FLESH : white ; texture granular ; flavor poor.

QUALITY : dessert poor ; cooking fair.

VALUE : for market second class.

SEASON : early October.

LAWSON (*Comet*.)

The most beautiful pear of its season, which is about the middle of August, but inclined to rot at core and become mealy if left hanging too long. Its flavor is disappointing, so that in spite of its beauty it is useless as a dessert pear. It has been widely advertised and too highly praised. In some parts it is grown as a cooking pear for home markets. For distant markets it is useless because too tender in flesh.

ORIGIN : on the farm of Mr. Lawson, in New York State, about the year 1800, judging from the appearance of the original tree, which was still standing in the year 1900. Quite recently, it was introduced to the public by Mr. Collins, under the name Comet, by reason of its bright red color.

TREE : tender, vigorous ; fairly productive ; succeeds on the quince.

FRUIT : medium to large ; obovate, almost pyriform : color yellow, shaded and obscurely streaked with bright red on the sunny sides, with a few small brown dots ; stem $1\frac{1}{2}$ inches long, with fleshy protuberance at point of insertion, inclined ; calyx half open in a large irregular basin.

FLESH : color, creamy white, coarse-grained, mealy when ripe, inclined to rot at the core ; flavor sweet, fairly good.

QUALITY : dessert good ; cooking good.

VALUE : market second class.

SEASON : early to mid August.

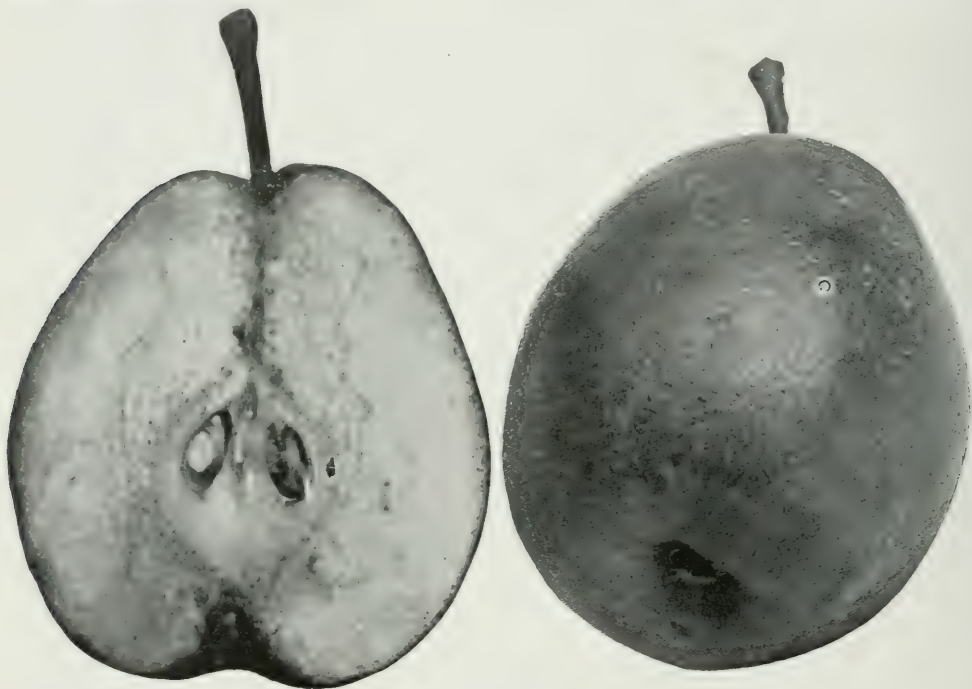
LAWRENCE.

Probably the best dessert pear for use in early winter.

ORIGIN: Flushing, Long Island, according to Downing; New York State, according to Catalogue American Pom. Soc.

TREE: a moderate grower; an early bearer; moderately productive.

FRUIT: size medium to large; form obovate, obtuse pyriform; color lemon yellow, with numerous small dots; stem one inch long in a shallow cavity; calyx open in a small, five humped basin.



LAWRENCE.

FLESH: color yellowish white; texture buttery and juicy; flavor sweet, rich, aromatic, very excellent.

QUALITY: dessert best; cooking good.

VALUE: market second rate.

SEASON: December.

ADAPTATION: one of the hardy pears.

LE CONTE.

An American pear grown for market in the Southern States. It is not considered profitable in Ontario.

ORIGIN: a Chinese seeding.

TREE: vigorous; productive; apparently not subject to blight.

FRUIT: large; form oblong, pyriform, turbinate; color yellow, often with slight touch of red on sunny side; skin free from blemishes, and not subject to scab.

FLESH: white; texture tender; flavor sweet, perfumed, ordinary.

QUALITY: dessert poor; cooking fair.

VALUE: second class for market.

LOUISE (*Louise Bonne de Jersey*).

LOUISE.

FRUIT : large ; form pyriform, sides usually unequal ; skin smooth, yellowish green with brownish red cheek, with numerous red and brown dots ; stem one to one and a half inches long, usually fleshy at insertion on one side, somewhat swollen at each extremity, set in a very slight, if any, depression ; calyx half closed, set in a wide, shallow, slightly plaited basin.

FLESH : white ; texture fine grained, juicy, buttery, melting ; flavor pleasant, aromatic.

QUALITY : very good for dessert purposes.

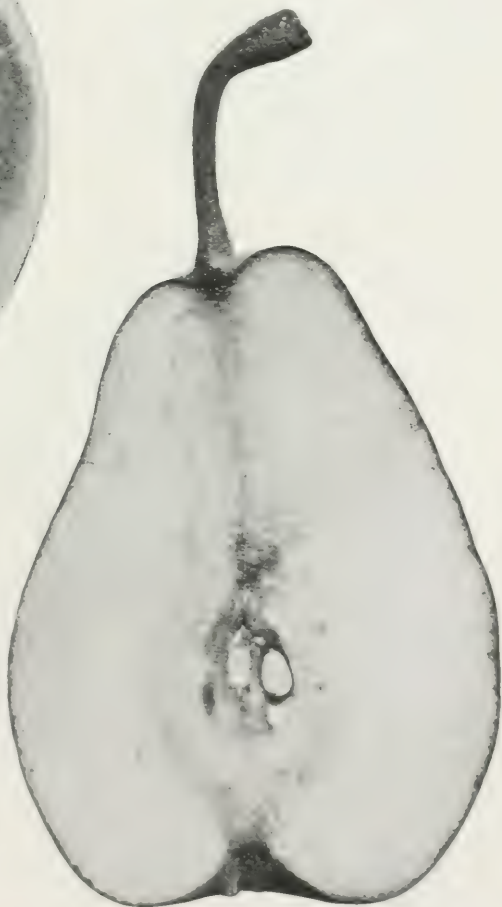
VALUE : home market, fair ; foreign market, first class.

SEASON : September to October.

An excellent export pear if well grown. This and the Duchess have long held the first place as market varieties with growers of dwarf pears in Ontario.

ORIGIN : at Avranches, France, about 1780, by Mr. Longueval, and named after Madam Louise de Longueval. About 1827, grafts were secured by Andre Leroy of Angers. The original tree is said to be still standing.

TREE : hardy in southern Ontario, succeeds better on quince than on pear stock ; a vigorous, upright grower ; very productive, if well cultivated and set in deep, rich sandy loam.



SECTION OF LOUISE.

MANNING (*Manning's Elizabeth.*).

A pretty little pear, desirable in the amateur's garden, but too small for the commercial orchard.



ORIGIN: in Louvain, in 1819, by Van Mons, who sent scions to America in 1832, to the Massachusetts Horticultural Society. Mr. Manning, having been asked by Van Mons to give it a name, called it in 1840 Elizabeth of Van Mons, but Downing in 1842 proposed that it be called Manning's Elizabeth, to honor the zeal of this horticulturist in importing new fruit trees.

TREE: healthy, of medium vigor, shoots dull red; very productive.



MANNING.

FRUIT: Size small; form regular, obovate, swollen towards the base; color bright yellow, covered on the basal half with a deep brownish red, which often spreads over the sunny side; stem one inch in length, swollen at the top, often set in an oblique depression; calyx open, set in a shallow basin.

FLESH: color creamy white; texture fine, buttery, moderately juicy; flavor sweet, rich, aromatic.

QUALITY: very good for dessert or pickling.

VALUE: second class for market purposes.

SEASON: August.

MARGUERITE (*Petite Marguerite*.)

Among the desirable varieties of dessert pears for the home garden we would certainly include the *Petite Marguerite*, a pear of the highest quality for table use. At Maplehurst the tree has proved itself an abundant bearer and a good grower. The fruit is not large, but as size is not an object in a dessert pear, this is not a fault. Its season is immediately after the Giffard and just before the Clapp and the Tyson. As a market pear it is hardly to be commended, because of its small size and color; and it will be a long time before we can convince the average dealer that size and color are not the chief considerations in a fruit.

ORIGIN: Angers, France, in nurseries of Andre LeRoy.

TREE: second rate in vigor, and first rate in productiveness: succeeds as either standard or dwarf, but more vigorous as a standard.

FRUIT: small size to medium; form oblate, obtuse pyriform; skin light green, often tinged and mottled with bright red on sunny side, yellowing somewhat at maturity; stalk $1\frac{1}{4}$ inches to $1\frac{1}{2}$ inches in length, set in a narrow cavity, of which one side is often much higher than the other; calyx partly open, in a shallow corrugated basin.

FLESH: white, yellowish at core; texture fine, melting, juicy; flavor sweet, vinous, agreeable.

QUALITY: very good for dessert, good for cooking.

VALUE: home market, second class.

SEASON: August.

OSBAND (*Osband's Summer*.)

Widely grown in North America. A good dessert pear for home garden, but the fruit is small and the tree is too scant a bearer to be profitable.

ORIGIN: Wayne County, New York State.

TREE: a moderately upright grower, healthy, fairly productive, an early bearer.

FRUIT: size small; form obovate, slightly pyriform, regular; color yellowish green, turning quite yellow at maturity, with a brownish red cheek and numerous small green and brown dots; stem $\frac{3}{4}$ of an inch long, set in a small, abrupt cavity; calyx half open, in a broad, slightly depressed basin; core small; seeds small.

FLESH: color white; texture fine-grained, juicy; flavor perfumed, sweet, rich and pleasant.

QUALITY: dessert very good; cooking fair.

VALUE: home market second class; distant market fourth class.

SEASON: August.

PITMASTON (*Pitmaston Duchess d'Angoulême.*)

A very promising variety, succeeding well as a dwarf: its large size, good shipping character, fine quality, and regular form, seem to make it very valuable for export. The fruit is too large to be grown as a standard.

ORIGIN: raised by John William, of Pitmaston, England; a cross between Duchess and Glout Morceau.

TREE: a very vigorous grower, and quite productive.

FRUIT: very large, oblong, obovate, obtuse, pyriform,; skin pale yellow, with light russet in cavity; stem stout, $1\frac{1}{2}$ to $1\frac{3}{8}$ inches long, set in a small cavity; calyx prominent, half open, set in a very shallow, shouldered basin.

FLESH: color creamy white; texture very fine, melting and juicy; flavor very pleasant, aromatic, sometimes slightly astringent.

QUALITY: Good, not quite equal to that of Duchess.

VALUE: first class for market.

SEASON: September and October.

PRESIDENT MAS.

A large, handsome winter pear.

ORIGIN: France.

TREE: a moderate grower; does best on quince stock.

FRUIT: size large; form obovate pyriform, irregular; skin yellow at maturity.

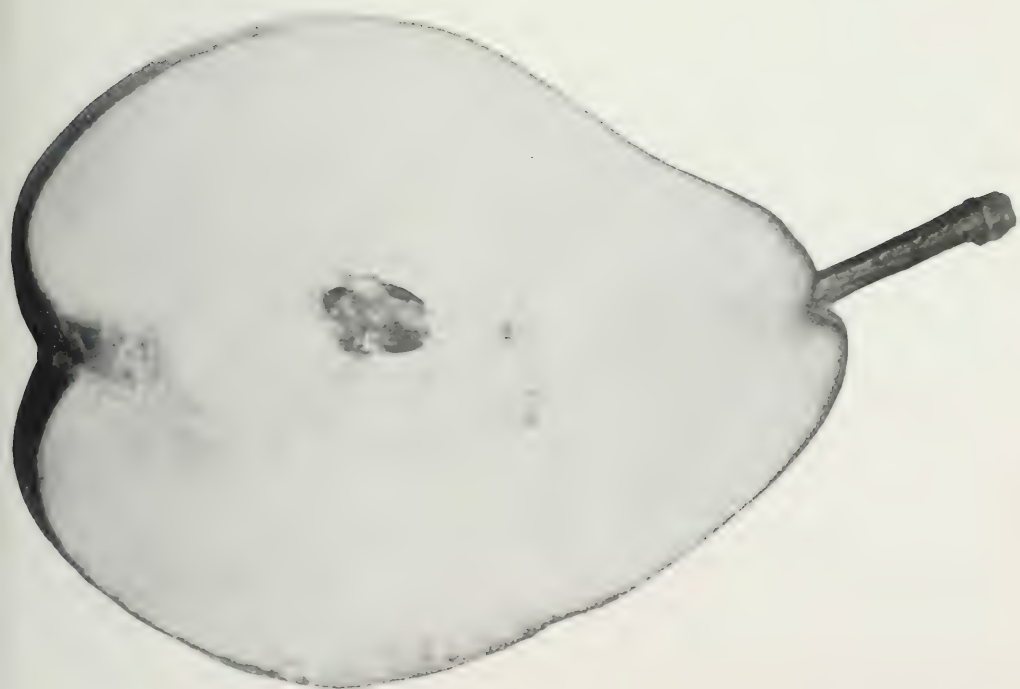
FLESH: white; texture melting, juicy; flavor vinous, very good.

QUALITY: dessert first rate.

VALUE: market apparently first class.

SEASON: December to January.

PITMASTON.



RITSON.



RITSON.

A delicious dessert pear, which is worthy of a place in every fruit garden ; it is not surpassed for canning or for pickling, having an aroma and peculiarly agreeable flavor.

Origin : Oshawa, Ontario, with Mr. Wellington. In response to our inquiry, Mr. W. E. Wellington writes :—" It was my grandmother Mrs. John Ritson, who planted the seeds from a pear which had been sent her from Boston. The tree has always stood on my grandfather's homestead as long as I can remember."

Tree : strong, healthy, upright grower. The original tree is now of immense size, probably over 30 feet high, and about one hundred years old. An annual bearer of nice, evenly formed fruit.

Fruit : size medium, form obovate pyriform, usually one-sided ; color of skin yellow, heavily shaded with golden russet, and numerous minute dots of a darker russet ; stem one-inch long, often inserted in a fleshy protuberance, and at a slight inclination ; calyx open wide in a very shallow, regular basin.

Flesh : creamy white ; texture fine, tender, buttery, juicy ; flavor, sweet, delicately perfumed.

Quality : dessert very good to best ; cooking very good.

Value : market promising for a special trade.

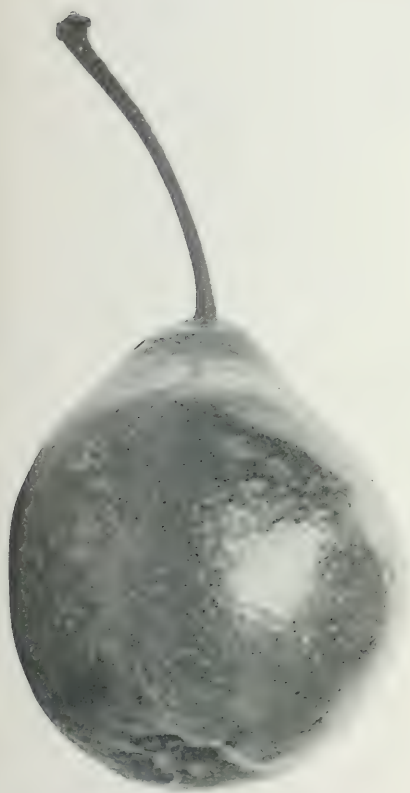
Season : October.



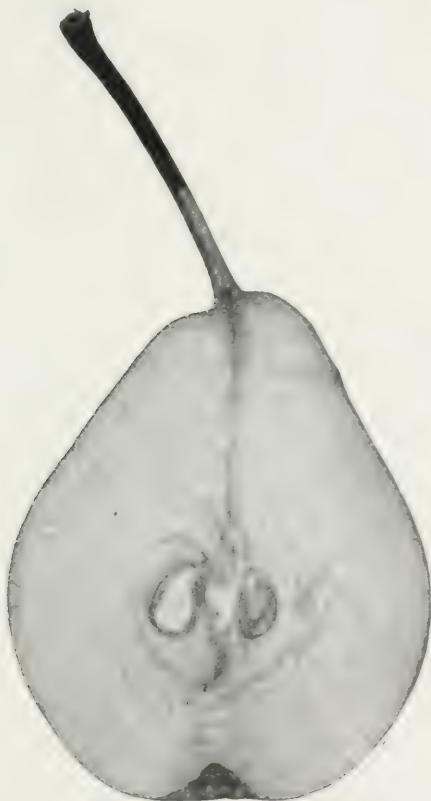
SECTION OF RITSON.

ROSTIEZER.

A small unattractive looking pear, of very high quality. It is the best of its season in quality for dessert purposes, and should have a place in the home garden. What the Seckel is in October, this pear is in August. The pear sells far below its value on account of its ordinary appearance.



ROSTIEZER.



SECTION OF ROSTIEZER.

TREE: healthy, vigorous, of sprawling habit; shoots few, and need shortening in.

FRUIT: small to medium, obovate, oblong pyriform; skin green, sometimes turning yellowish, with reddish-brown cheek; stem slender and nearly two inches in length; calyx open; basin small.

FLESH: juicy, melting, sweet, very delicious, of very finest quality.

VALUE: market, third class.

SEASON: mid to late August.

SECKEL.

The finest dessert pear in cultivation, and one that should never be omitted from the garden, when planting pears for home use. Downing calls it "The richest and most exquisitely flavored variety known." At Maplehurst it has been grown both as a dwarf and as a standard; in the former case with the most satisfactory results, but in the latter, smaller, less highly flavored and less attractive in appearance.

Its small size rules it out of the commercial orchard, unless one can cultivate a very special demand among a certain class of consumers who will appreciate its high quality.

ORIGIN: on the farm of Mr. Seckel, of Philadelphia, near the Delaware river, where in 1834, the original tree was still standing, aged one hundred years and having reached the height of thirty feet. The Seckel was first introduced into England, into the garden of the Royal Horticultural Society in 1819.

TREE: healthy, hardy, and productive; forms a compact symmetrical head; wood olive brown in color, stout and short jointed; succeeds best as a dwarf.

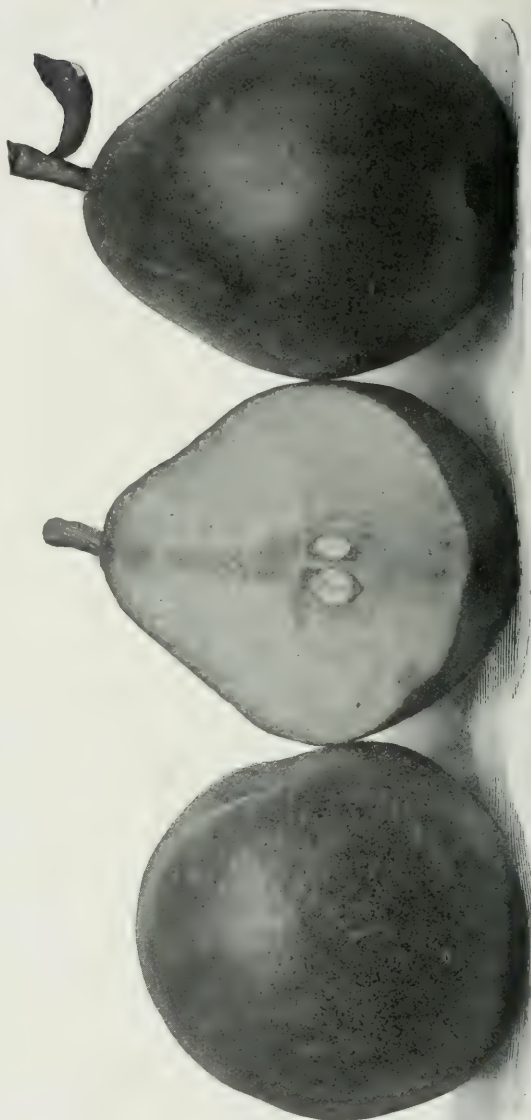
FRUIT: size small, form obovate, regular and even; color dull brownish green, yellowing as it ripens with a deep brownish red cheek; stem half an inch in length, in a very small cavity; calyx small, open, in a shallow basin.

FLESH: white; texture very fine grained, melting and juicy; flavor honey-sweet; rich spicy, with delicate aroma.

QUALITY: dessert best; cooking good.

VALUE: first class for a special market; but second class where not known, on account of its small size.

SEASON: September to October.



SHELDON.



One of the most delicious of dessert pears, if eaten just at the proper time. Worthy of a place in every home garden, but not productive enough to be planted for market.

ORIGIN : accidental on farm of Norman Sheldon of Huron, Wayne Co., N.J.

TREE : vigorous, erect, not very productive, late coming into bearing.

FRUIT : above medium in size, roundish, obtuse obovate ; skin yellowish-green, covered with

thin light russet, brownish crimson in sun, russet dots ; stalk short, stout, in a narrow cavity ; calyx nearly open, in a broad basin.

FLESH : color creamy ; texture buttery, juicy ; flavor sweet, aromatic.

SEASON : October.



SAPIEGANKA.

A Russian pear of fine appearance, scions of which were sent out to Mr. L. Woolverton in 1892, by M. Jaroslav Niemetz, of Winnitza, Podolie, Russia. Its fine appearance is in its favor, but its quality is inferior to other varieties of its season, and, unless it should prove desirable on account of its hardness, would not be worthy of general cultivation. Mr. Niemetz says, "In its home in Lithuania, old and large trees are met with which have endured many and severe winters in the Tamboff Government. It is the most hardy of all pears there grown, and, therefore, is certainly a hardy variety. The flavor of the flesh depends upon local conditions, for, though it is tasteful enough in the warmer districts, it is sometimes harsh; when grown in the north is juicy and buttery."

TREE : hardy, productive, but subject to blight.

FRUIT : size medium, oblate, often somewhat flattened; color brownish yellow, with brownish red in sun, with numerous small dots; stem long in small cavity; calyx segments large, partly open in a broad, wrinkled basin.

FLESH : white; texture coarse, somewhat firm and juicy.

QUALITY : dessert poor; cooking poor.

VALUE : market third class.

SEASON : August.

ADAPTATION : succeeds well at Grimsby. Tested by the Dominion Experimental Farms and found tender in Manitoba and the Northwest, but perfectly hardy at Ottawa and in Muskoka.

SOUVENIR (*Souvenir du Congrès.*)

A very large, showy pear, but coarse in flesh and of ordinary quality. Single trees are found in many Ontario fruit gardens, but so far we know of no orchards of this variety planted for profit. Hogg, the British pomologist, however, speaks of it more highly, as follows:—"A very handsome and excellent pear: ripe in the end of August and the beginning of September. It has a great resemblance to the Williams (Bartlett), but is quite a distinct fruit."

ORIGIN : France, by M. Morel, of Lyon-Vaise, and dedicated to the Pomological Congress at France.

TREE : vigorous and productive, pyramidal.

FRUIT : very large, form oblong obovate, undulating in outline; color clear yellow when ripe, with a red cheek and many brown dots; stem $\frac{3}{4}$ of an inch long, stout, much inclined, inserted without a cavity; calyx large, open, set in a deep basin.

FLESH : color white; texture tender, but coarse, juicy, melting; flavor rich, vinous, aromatic, somewhat resembling that of Bartlett.

QUALITY : dessert fair; cooking not tested.

VALUE : home market first class.

SEASON : late September and early October.

ADAPTATION : not widely tested in Ontario.

SUMMER DOYENNE (*Doyenne d'Été of Hogg; Doyenne de Juillet of Le Roy.*)

For the home garden this pear is most desirable, not only for its good quality for dessert purposes, but because it has no competitor in the last half of July. It should be gathered before it is mellow to preserve its juiciness, for, if ripened on the tree, it becomes mealy and insipid. Its very small size makes it undesirable in the commercial orchard, especially now that we must compete with larger varieties from California, which ripen earlier in that climate than they do with us.



ORIGIN : Dr. Van Mons, Professor at Louvain, Belgium, about 1823, at which time he had on his grounds about 2,000 seedlings of merit.

TREE : vigorous young shoots, light yellowish brown, of upright slender habit ; an early and abundant bearer ; succeeds as dwarf or standard.

FRUIT : small, form roundish, obovate ; color green to lemon yellow with brownish red cheek on the sunny side, and numerous grey dots ; stalk about an inch long, sometimes longer, stout, attached in a very slight depression ; calyx small, half open, in a shallow plaited basin.

FLESH : white ; texture fine, tender, juicy ; flavor sweet and pleasant with slight aroma.

QUALITY : dessert very good ; too small for cooking.

VALUE : too small for a market pear, except in limited quantities.

SEASON : July.

ADAPTATION : hardy in Southern Ontario ; fairly hardy in Bruce and Huron.

TRIUMPH.

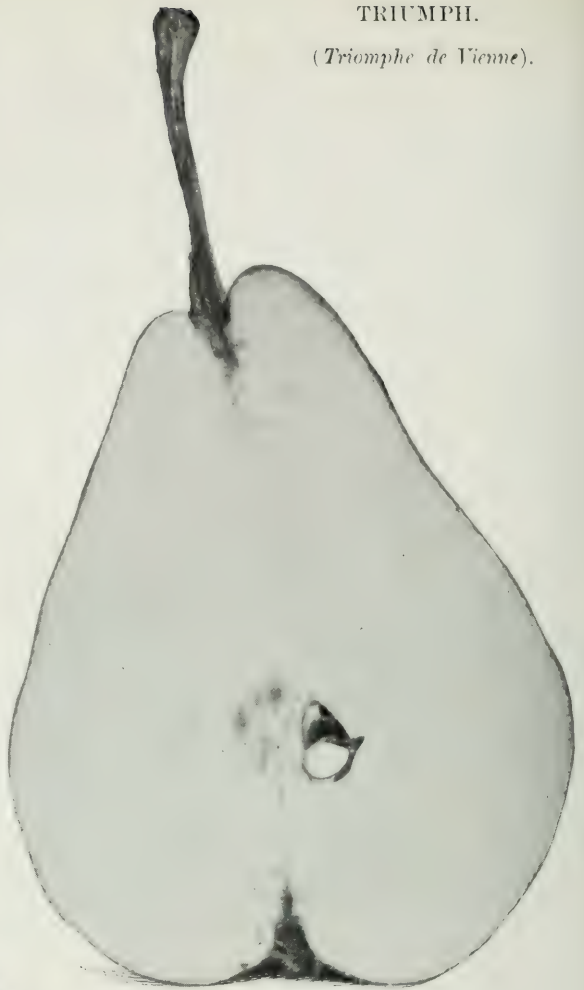
(*Triomphe de Vienne*).

A very fine, large, showy pear, a trifle later than Bartlett, larger in size, but not equal to it in quality; promising as a commercial variety.

ORIGIN: France.

TREE: a thrifty, upright grower; productive.

FRUIT: large; form obovate, pyriform, somewhat uneven and irregular; skin greenish yellow, with patches of russet; stem one and a quarter inches long, set in a shallow, uneven, often one-sided cavity; calyx open, in a broad, irregular, russeted basin.



SECTION OF TRIUMPH.



TRIUMPH.

FLESH: creamy white, very juicy; flavor rich, sweet and excellent.

QUALITY: dessert very good; cooking very good.

VALUE: market, home or foreign, first class.

SEASON: September.

TYSON.

A fine pear yielding enormous crops of medium sized fruit, very good for dessert or cooking ; but too near the season of the Bartlett to be profitable for market.

ORIGIN : a seedling found in a hedge on the farm of Jonathan Tyson, near Philadelphia.

TREE: vigorous; upright; very productive.

FRUIT : size medium ; form acute pyriform ; color green, turning yellow when fully ripe, russet about basin, cheek crimson, dots brown, numerous : stem $1\frac{1}{2}$ inches long more or less, fleshy at base ; calyx open.



TYSON.

FLESH : color white ; texture tender, buttery, fine grained, juicy ; flavor sweet, aromatic, excellent.

QUALITY : dessert very good ; cooking very good.

VALUE : home market second class.

SEASON : August.

VICAR (*Vicar of Winkfield of Hogg; Cure of Leroy.*)

A French pear considerably grown in Ontario as a winter pear, but it does not reach its best perfection in our climate and does not deserve a place in our orchards.

ORIGIN: found wild near Clion, France, by M. Leroy, curate of Villiers-en-Brenne, in the year 1760; distributed in France under sixteen different names; introduced into England by the Rev. W. L. Rham, vicar of Winkfield, in Berkshire, hence its English name.

TREE: vigorous, but somewhat susceptible to blight; very productive.

FRUIT: large; form long pyriform, one-sided; skin green, seldom tinged with brown on the sunny side, and marked with small brown dots; stem usually one and a half inches long, fleshy at base, and inserted obliquely without a cavity; calyx open, with large segments, set in a shallow basin.

FLESH: greenish white; texture firm, not very juicy as grown in Ontario; flavor fair, if well ripened.

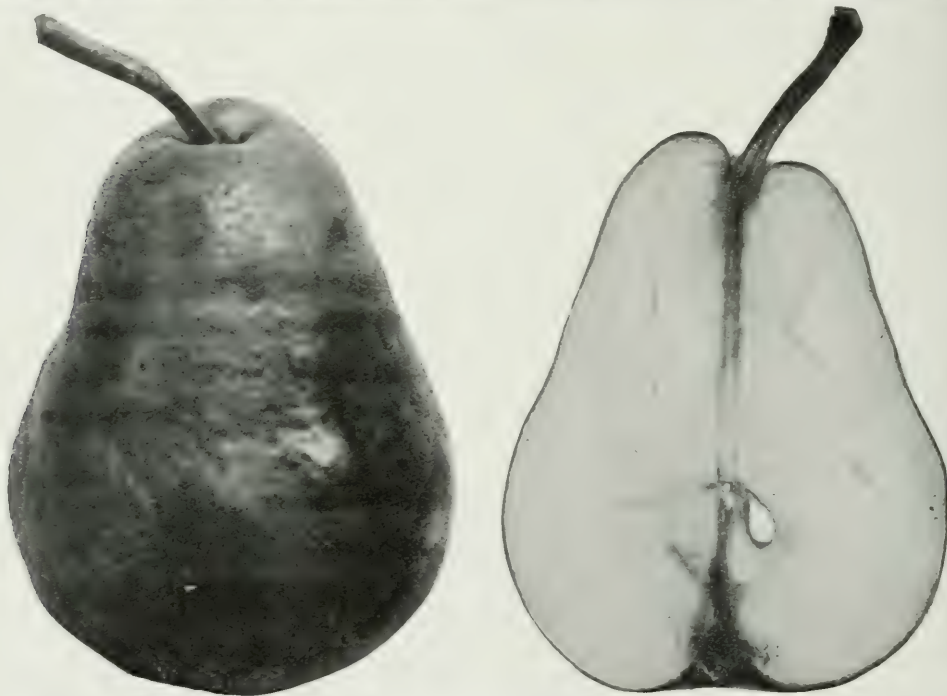
QUALITY: dessert very poor; cooking fair.

VALUE: home and foreign market second class.

SEASON: early winter.

WILDER.

A valuable early market pear, being beautiful in appearance, of fair size and very good flavor: probably the best of its season, but inclined to rot at the core if left hanging on the tree.



WILDER.

ORIGIN: chance seedling on south shore of Lake Erie.

TREE: vigorous, very productive, and an early bearer when grafted on the quince.

FRUIT: fair to large in size; form ovate, obtuse pyriform, sometimes shouldered at stem; color greenish yellow, with deep red cheek and numerous gray dots; stem stout, three quarters to one inch in length; calyx open.

FLESH: white; texture tender, fine grained; flavor sweet, aromatic and very pleasant.

QUALITY: dessert very good.

VALUE: home market first class.

SEASON: August.

WHITE DOYENNE (*Vigalieu* of New York State.

An old variety with many French synonyms, of which the proper one according to LeRoy is La Doyenne. Downing speaks of it as "unquestionably one of the most perfect of autumn pears," and on account of its excellent quality and the productiveness of the tree, it was at one time widely planted in the commercial orchards of Ontario and the United States. Latterly, however, like the Flemish Beauty, it has become subject to black spot, for which reason it is losing favor.

Origin : France.

TREE : healthy, not subject to blight ; a fairly vigorous grower, and an abundant bearer ; usually grown as a standard.

FRUIT : size medium to large, form obovate, variable in length ; skin green at first, changing to yellow as it ripens, sometimes red in the sun, sprinkled with numerous russet dots ; stem $\frac{3}{4}$ of an inch long, set in a shallow cavity ; calyx half closed in a shallow slightly plaited basin.

FLESH : white ; texture fine grained, buttery, fairly juicy ; flavor sugary, aromatic, perfumed.

QUALITY : dessert very good ; cooking very good.

VALUE : market second class.

SEASON : September and October.

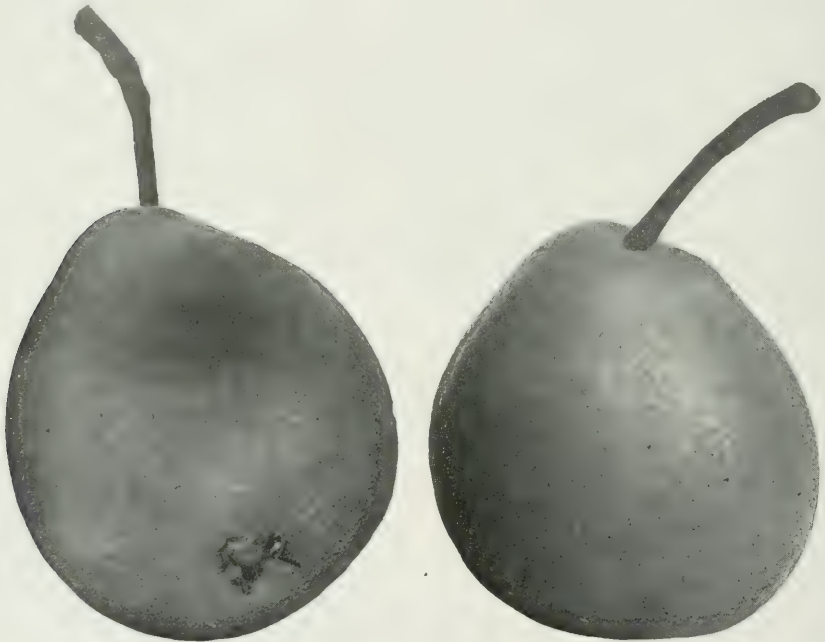


WINTER NELIS.

An old variety of excellent quality, which has long occupied a high place as a winter dessert pear to succeed the Lawrence; scarcely large enough nor attractive enough to be highly recommended for the commercial orchard.

ORIGIN: raised by Jean Charles Nelis, of Malines, in Belgium; introduced into England in 1818.

TREE: a spreading, straggling, stocky grower; should be topworked; hardy; an early bearer; very productive.



WINTER NELIS.

FRUIT: size small to medium; form roundish obovate, short pyriform; color of skin dull green, becoming yellowish green with dots and patches of brown russet; stalk about one and a quarter inches long, curved, set in a narrow cavity; calyx open, with erect segments, in a shallow, somewhat plaited basin.

FLESH: color yellowish white; texture fine grained, buttery, juicy; flavor rich, sugary, vinous, aromatic.

QUALITY: dessert very good to best; cooking good.

VALUE: market second class.

SEASON: early to mid winter.

THE PLUM.

The plum has a wider range over the Province of Ontario than the pear or peach, this fruit being a native of the Province and found as far north as Manitoba.

There are three large groups into which the plums may be divided here, namely, the European, Japanese, and American. In the European or domestica group are included most of the varieties which are grown in Ontario commercially. These plums are not as hardy as the natives, hence their profitable culture is limited to almost exactly the same districts as the pear, the commercial orchards being mostly found in southern Ontario, the Georgian Bay District, and along Lake Ontario west of the Bay of Quinte. A few of the hardiest produce crops occasionally in eastern Ontario and up to about latitude 45 degrees in central Ontario, but they are too uncertain to be grown for profit.

The Japanese plums are grown over practically the same area as the European, but the fruit buds average a little more tender.

In the American group are included the Americana and Nigra plums, the former being derived from a hardy United States species and the latter from the native Canadian plum. The varieties of this group are quite hardy and can be grown commercially where the European and Japanese plums will not succeed, and while not so good in quality as the others, good prices are at present obtained for what are produced.

Plums are not being so extensively planted at present as other large fruits, since during recent years the markets have several times been glutted, resulting in low prices. The demand for plums is, however, always large, and the excellent market which is opening up in the North-west will probably in the future prevent, in a great measure, this over-supply.

The cultural directions for the apple will apply in most particulars to the plum, which will succeed on almost all kinds of well drained soils, although it does best on the heavier clay loams. Trees one or two years of age should be planted about eighteen feet apart each way, the soil having been thoroughly prepared beforehand. The trees should be severely headed back when planted, and future pruning will consist in forming a well shaped open head. As some varieties make exceptionally strong growth it is a good practice when the trees are young to prune the young growth back about one-half each spring to avoid splitting. When the trees begin to bear little pruning is necessary, as they usually bear so heavily that the trees do not make much growth annually.

Orchards should be kept thoroughly cultivated, and cover crops are recommended as for the apple, cherry, peach and pear. The fruit should be picked when it is well colored but still firm.

VARIETIES RECOMMENDED.

GENERAL LIST. APPROVED BY THE BOARD OF CONTROL.

Commercial and Domestic:

American: These are extremely hardy and are desirable where the European and Japanese varieties cannot be grown: Aitkin, Cheney, Bixby, Mankato, Wolf, Hawkeye, Stoddard.

European: Bradshaw, Imperial Gage, Gueii, Shipper Pride, Lombard (liable to over bear, requires thinning), Quackenboss, Yellow Egg, Grand Duke, Coe, Reine Claude (one of the best for canning).

Japanese: These are apparently quite as hardy as the European varieties: Red June, Abundance, Burbank, Chabot, Satsuma (red fleshed, desirable for canning).

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Lake Huron District: By A. E. Sherrington, Walkerton, Ont.

Commercial and Domestic: Red June, Ogon, Burbank, Bradshaw, Imperial Gage, Gueii, Shipper Pride, Victoria, Quackenboss, Yellow Egg, Monarch, Grand Duke, Satsuma.

Georgian Bay District: By John Mitchell, Clarksburg.

Commercial and Domestic: Red June, Burbank, Washington, Bradshaw, Imperial Gage, Quackenboss, Arch Duke, Diamond, Monarch, Yellow Egg, Coe, Satsuma, Reine Claude.

Burlington District: By A. W. Peart, Burlington, Ont.

Commercial:

European: Bradshaw, Imperial Gage, Lombard, Yellow Egg, Glass, Reine Claude.

Japanese: Red June, Abundance, Burbank, Chabot, Satsuma.

Domestic: Abundance, Saunders, Bradshaw, Imperial Gage, Smith Orleans, Lombard, Yellow Egg, Satsuma, Reine Claude.

Niagara District: By Linus Woolverton, Grimsby, Ont.

Commercial: Red June, Burbank, Bradshaw, Chabot, Gueii, Coe, Quackenboss, Satsuma, Reine Claude.

Domestic: Abundance, Washington, Yellow Egg, Shropshire, Quackenboss, Satsuma, Reine Claude.

St. Lawrence District: By Harold Jones, Maitland, Ont.

Domestic:

NOTE.—The *European and Japanese varieties are only recommended for the home garden in the St. Lawrence District, as they have not proved entirely hardy nor very productive.*

American: Milton, Whitaker, Hammer.

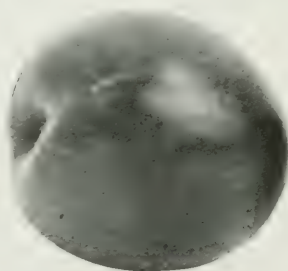
European: Gueii, Lombard, Shipper Pride, Glass.

Japanese: Red June, Burbank.

DESCRIPTION OF VARIETIES.

AITKEN.

"Fruit large, oval; cavity narrow, medium depth; suture obscure; apex pointed; color uniformly deep red all over; dots none; bloom none; skin thin; flesh deep yellow, juicy, moderately sweet, not rich or high flavored; stone large, flat, oval, semi-cling.



AITKEN.

no astringency; quality medium to above; season last week of August. Tree only fairly productive. Nigra group. The earliness of this plum is the principal point for recommendation." (*Macoun*).

ABUNDANCE.

One of the best of the Japan plums for the home garden. It is early in season, being ripe about the middle of August, but matures unevenly. To get its best flavor it should be picked while still firm, and ripened indoors like a Bartlett pear: it will color beautifully, become very juicy, and the flavor will be sweet and rich.

ORIGIN: one of Luther Burbank's importations from Japan in 1884.

TREE: vigorous; productive, a six year old tree, at our Lake Huron fruit station, bearing six 12-quart baskets of fruit in 1901; habit upright.



ABUNDANCE.

FRUIT: size medium to large; form roundish, narrowing toward the apex; color bright red on a yellowish ground with numerous red dots; stalk strong, three-quarters of an inch long, inserted in a narrow, deep cavity; suture shallow, distinct; apex pointed; pit oval; a partial cling.

FLESH: color yellow; texture tender, very juicy; flavor sweet and delicious.

QUALITY: dessert fair; cooking poor.

VALUE: market, second class.

SEASON: mid August.

ARCH DUKE.

A good market variety.

ORIGIN: imported from England, by S. D. Willard, Seneca, N. Y.

TREE: Domestica.

FRUIT: size large; form oval, necked; stem medium, stout; cavity deep, medium; color dark blue with many russet dots; bloom bluish, heavy; suture more than half round.

FLESH: yellowish; cling; texture meaty, juicy; flavor subacid, pleasant.

QUALITY: cooking very good.

VALUE: first class in some localities.

SEASON: late.

ARCTIC.

The tree is hardy and the fruit is of some value where the better varieties do not succeed. It is very productive, but too small to bring the best prices in the market, especially in view of its ordinary quality.

ORIGIN: Maine.

TREE: hardy; fairly vigorous; productive; trees at our Lake Huron station, eight years planted, yielded from six to eight baskets each.

FRUIT: size small, form oval; color very dark purple, with thin blue bloom; suture traceable; stem slender, three quarters of an inch long, set in a small cavity.

FLESH: color yellowish green; texture firm, moderately juicy; flavor moderately sweet; free stone.

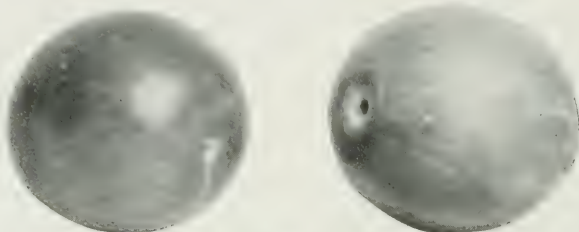
QUALITY: dessert useless; cooking good.

VALUE: market second to third class.

SEASON: mid August to early September in southern parts of the Province, and early September in more northerly plum districts.

BIXBY.

"Fruit above medium to large, roundish; cavity narrow, medium depth; suture rather indistinct, slightly depressed; apex rounded; color yellow, more or less covered with bright red; dots numerous, small, yellow; bloom fairly heavy; skin moderately thick, rather tender; flesh deep yellow, juicy; stone medium size, oval in outline, considerably flattened, cling; sweet but not rich in flavor, no astringency; quality good; season late, August to early September. A very handsome early plum. Chief fault is unevenness of ripening. Makes good preserves." (*Macoun*).

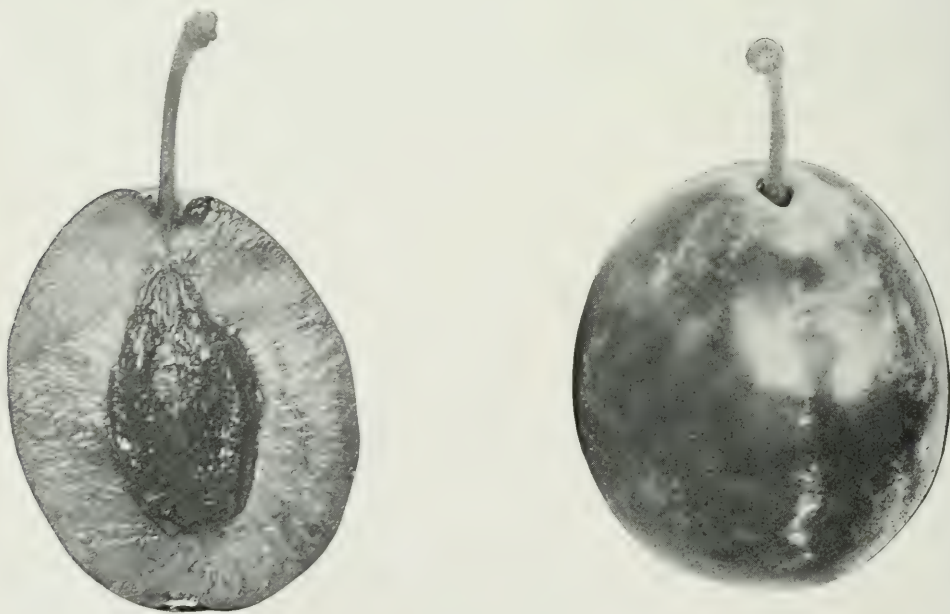


BIXBY.

BRADSHAW (*Niagara, Blue Imperial.*)

Considered by many one of our most valuable European varieties whether for home use or market, because of its fine quality, its large size and beautiful appearance.

TREE: erect, vigorous, moderately productive with occasional heavy crops; late coming into bearing; class, *Domestica*.



BRADSHAW.

FRUIT: size large; stalk one inch long, slightly curved; color reddish-purple, with blue bloom; apex round, slightly depressed; suture on one side, broad and shallow.

FLESH: color yellowish; texture juicy, tender; flavor rich and sweet; pit long, thin oval, partial cling.

QUALITY: dessert very good; cooking very good.

VALUE: home market first class.

SEASON: mid to late August.

BURBANK.

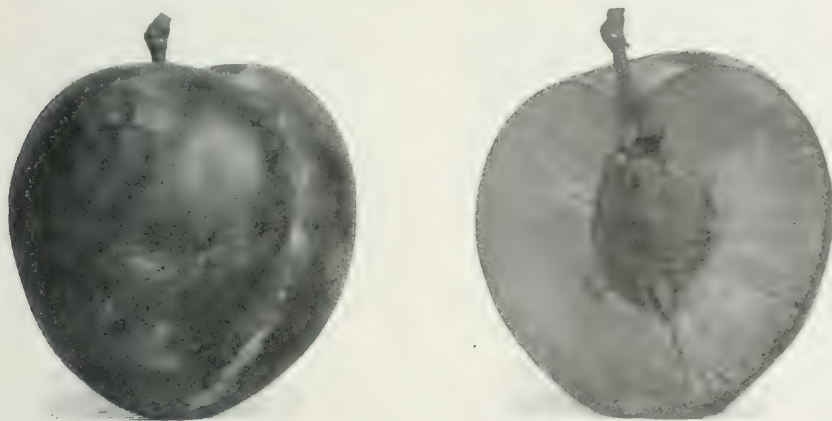
The Burbank is one of the best of the Japanese plums for the commercial orchard, on account of its beauty, its great productiveness, and its excellent shipping quality.

ORIGIN : It was in 1885 that Mr. Luther Burbank of Santa Rosa, California, imported some plum trees from Japan and, when they fruited, he selected this as one of the best and most worthy of propagation. In 1891 he sent samples to the Department of Agriculture at Washington and the Pomologist of the Department named it Burbank, after the introducer.

This plum has been before us for ten years and notwithstanding the great number of Japanese varieties now sold by nurserymen, still holds the highest place.

Compared with the Domestica class, the Japanese are inferior in quality, but, when fully ripened, are fairly good eating. Like the Kieffer pear, the Burbank plum is making its reputation rather on quantity than on quality.

TREE : hardy ; a very vigorous, wayward grower, making a very badly shaped tree, unless severely headed back and kept within bounds ; an early and most abundant bearer ; the fruit needs thinning to secure good size.



BURBANK.

FRUIT : medium to large ; form when properly thinned, nearly round, but slightly conical ; color orange yellow ground, shaded with red, and almost purple on the side exposed to the sun ; skin very smooth, with a slight bloom, peels easily when ripe ; suture traceable ; apex a small point ; stem half to five-eighths of an inch long, stout ; cavity deep abrupt, with leather-crack marks.

FLESH : color amber ; texture juicy and tender when fully ripe ; flavor sweet, fairly agreeable ; stone medium, pointed, cling.

QUALITY : good for cooking ; fair for dessert.

VALUE : first class for market.

SEASON : late August.

ADAPTATION : general ; succeeds fairly well on St. Joseph Island.

CLIMAX.

A very large, fine looking Japan plum ; a fine market variety.

ORIGIN : Hybrid of P. Simoni and Botan, raised by Luther Burbank of Santa Rosa, California.

TREE : vigorous ; productive.

FRUIT : size very large ; form heart shaped, one sided ; color vermilion, with numerous white specks.

FLESH : cling ; color yellow ; texture firm, juicy ; flavor rich, aromatic.

QUALITY : dessert good ; cooking not tested.

VALUE : market first class.

SEASON : mid August.

CHABOT (*Yellow Japan, Bailey.*)

This is the best Japan plum of its season, which is about two weeks later than Burbank.

ORIGIN: imported from Japan by Mr. Chabot, of Berkeley, Cal., and introduced to the trade by Mr. Luther Burbank in the year 1896.

TREE: very vigorous, head fine, large, symmetrical; productive; an early bearer.

FRUIT: medium to large for a Japan plum: form oblong-conical, almost heart shaped; color red, with pinkish bloom and numerous minute yellowish specks; stem three-quarters of an inch long, stout; apex a point in a narrow, deep depression; suture traceable.



CHABOT.

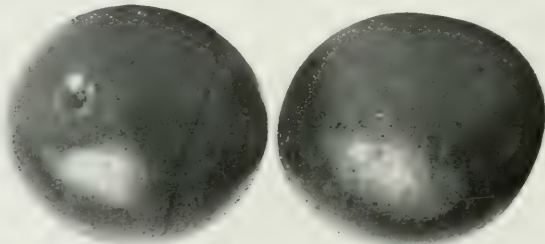
FLESH: color yellowish; texture moderately firm and juicy; flavor sweet, perfumed, very pleasant; clings to stone.

QUALITY: dessert good; cooking and drying very good.

SEASON: early to mid September.

CHENEY.

"Fruit large, round to somewhat oval, uneven; cavity narrow, medium depth; suture merely an indistinct line; apex rounded; color uniformly deep red all over, sometimes paler on one side; dots none; bloom none; skin moderately thick, tough, not astringent; flesh deep yellow, juicy; stone medium size, flat, oval, cling; sweet, moderately rich flavor; quality good. Season late August to early September. One of the best. It soon gets soft, however, after ripening. Tree a strong grower, moderately productive. Nigra group." (*Mucoun*).



CHENEY.

COE. (*Coe's Golden Drop*).

A popular canning plum for the home garden; scarcely productive enough to be recommended for the commercial orchard.

ORIGIN: England.

TREE: vigorous; fairly productive; class Domestica.

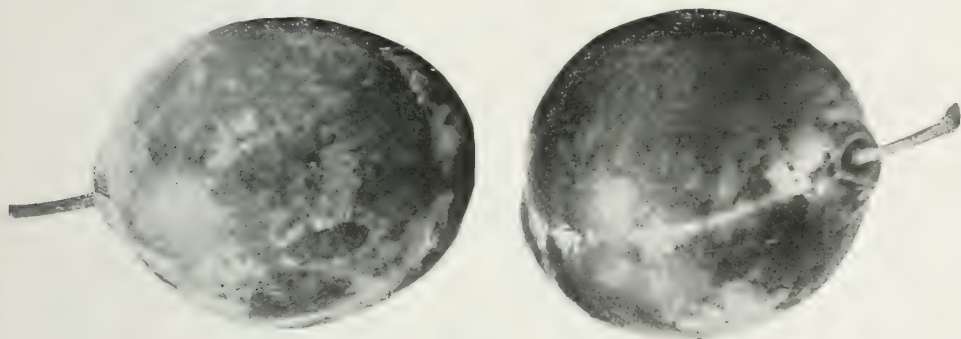
FRUIT: large; form oval; suture distinct; neck short; sides unequal; color golden yellow with dots of red next the sun; bloom yellow; stalk three-quarters of an inch long, stout, in a shallow cavity.

FLESH: cling; color yellowish; texture firm, not fine grained; flavor sweet and pleasant.

QUALITY: cooking very good; dessert fair.

VALUE: market first class.

SEASON: mid September.



COE.

DIAMOND (*Black Diamond*).

Considerably grown for cooking purposes.

ORIGIN: Kent, England.

TREE: vigorous; productive; class Domestica.

FRUIT: size large; form oval; suture distinct, shallow; stem three quarters of an inch long in a narrow, deep cavity; dots small; color dark purple with pale blue bloom.

FLESH: cling; color deep yellow; texture coarse grained, dry; flavor brisk acid.

QUALITY: dessert poor; cooking good.

VALUE: market first class.

SEASON: September.

DUANE (*Duane's Purple*).

A good commercial plum, a profitable variety in the Western States.

ORIGIN: Duanesburgh, N. Y.

TREE: vigorous, productive.

FRUIT: very large; form oblong, oval longer on side; color reddish purple with lilac bloom, turning dark blue; stalk slender, three quarters of an inch long set in a narrow cavity.

FLESH: color yellow; texture tender, juicy; flavor moderately sweet and good; partial clingstone.

SEASON: late August to early September.

QUALITY: cooking good.

VALUE: market first class.

GERMAN PRUNE.

Highly valued for shipping to distant markets because it keeps and carries well ; valued also for drying and preserving.

ORIGIN : Germany ; widely grown over Europe.

TREE : fairly vigorous ; productive ; may be propagated from seed without much variation.

FRUIT : size medium, sometimes below ; form long oval, sides unequal, elongated ; suture distinct ; stem three-quarters of an inch long, curved, inserted without cavity ; color purple, with blue bloom.

FLESH : free from pit ; color yellowish green ; texture firm ; flavor sweet, pleasant, not rich.

QUALITY : dessert poor ; drying good.

VALUE : near market second class ; distant market second class.

SEASON : September and October.

GLASS. (*Glass' Seedling*).

A commercial variety resembling Quackenboss.

ORIGIN : with Alexander Glass, at Guelph, Ontario.

TREE : hardy ; vigorous ; habit upright ; foliage peculiar dark green ; productive ; class *Domestica*.

FRUIT : size large ; form round oval, irregular at apex ; suture distinct ; apex depressed ; stem three-quarters to one inch long ; color dark purple with thin blue bloom and white dots ; skin thick, firm.



GLASS.

FLESH : free from pit ; color greenish yellow ; texture juicy ; flavor sweet and agreeable.

QUALITY : dessert fair ; cooking good.

VALUE : market good.

SEASON : September.

GOLD.

A very attractive plum, because of its golden yellow color, but not recommended for the commercial orchard.

ORIGIN: a hybrid of Chickasaw and Japan, originated by H. A. Terry, of Crescent, Iowa.

TREE: a poor grower, but an early and abundant bearer.

FRUIT: large roundish; color golden yellow, with a blush of light red about the stem; stem three-quarters of an inch in length; skin tough.

FLESH: yellow; texture tender and juicy; flavor sweet, aromatic, and pleasant; clingstone.

QUALITY: dessert, fair.

VALUE: market second class.

SEASON: late August.

GRAND DUKE.

A valuable market plum, on account of its large size and handsome appearance.

ORIGIN: Europe.

TREE: healthy; moderately vigorous; quite productive.

FRUIT: size large; form obovate; color dark blue or black, with dark blue bloom; stem about one inch long, in a small cavity; suture deep.



GRAND DUKE.

FLESH: color yellow; texture firm, flavor agreeable; cling.

VALUE: one of the best late market plums.

SEASON: late September.

GUEII. (*Blue Magnum Bonum*).

A valuable plum for the commercial orchard; the fruit is very subject to rot; in the southern parts of the Province.

ORIGIN: with Mr. Hagaman, Lansingburgh, N. Y., about 1850. It was named after John Goeway (pronounced Gueii), who was the first to cultivate the plum extensively, and it has of late been spelled after the pronunciation.

TREE: an upright, vigorous grower, becoming more spreading with age; hardy; an early and abundant bearer.



GUEII.

FRUIT: size, medium to large; form, roundish ovate, narrowing slightly toward apex; color very dark purple, with blue bloom; stem one and a half inches long, slender, set in a large, deep cavity; suture very slight; apex a small point.

FLESH: color pale yellow; texture firm, juicy; flavor, moderately sweet, pleasant; almost free of stone.

QUALITY: dessert, poor; cooking, very good.

VALUE: home market first class.

SEASON: late August to early September.

HALE.

A yellow Japan plum, coming in between Abundance and Burbank.

ORIGIN: Japan: imported by Luther Burbank in 1885; named after the introducer, Mr. J. H. Hale.

TREE: very vigorous; habit spreading; very productive in 1905.

FRUIT: size rather above medium, form globular; suture traceable on one side; color of skin orange, with thin whitish bloom; stem slender, three-quarters of an inch in length; drops easily.

FLESH: color golden yellow; texture tender, juicy; flavor rich, pleasant; cling.

QUALITY: dessert good; cooking very good.

VALUE: market second class.

SEASON: mid to late August.

HAND. (*General Hand*).

A very fine, large plum of the Gage group, which is worthy of a place in the amateur's garden as a dessert or preserving plum, but not profitable as a market variety.

ORIGIN: on farm of General Hand, Lancaster, Pennsylvania.

TREE: a very vigorous grower, but a shy bearer; class *Domestica*.

FRUIT: round; size medium to large; skin deep golden yellow, marbled with greenish yellow; stem slender, about an inch long, inserted in a shallow cavity; suture shallow.

FLESH: color pale yellow; texture coarse, moderately juicy; flavor sweet and very good; free from stone.

QUALITY: very good for either dessert or cooking.

VALUE: market first class.

SEASON: September.

HAMMER.

"Fruit round oval; size medium to large; cavity very shallow; suture a line; color crimson; dots many, minute, and a few larger yellow; bloom blue; skin thick; flesh yellow; stone small, round, slightly flattened, nearly free; quality very good; season after Wolf and Weaver. Originated with H. A. Terry, Iowa, who says it is a seedling of Miner, but thinks it has an admixture of Americana blood. A fine variety." (*Wagh*)

HAWKEYE.

FRUIT: large, roundish; cavity shallow, narrow; suture merely a distinct line; apex rounded; color yellow, more or less covered with purplish red; dots small, indistinct; bloom medium; skin thick, moderately tough.

FLESH: deep yellow, juicy; stone large, broad, much flattened, cling; sweet, good flavor.

QUALITY: good.

SEASON: mid to late September. One of the best. (*Macoun*).



HAWKEYE.

ITALIAN PRUNE. (*Fellenburg*).

An old variety from Europe; a fine late shipping plum, and widely grown for market.

ORIGIN: Europe.

TREE: of spreading habit; productive; class *Domestica*.

FRUIT: size medium; form oval, narrowing at the ends, one sided; stem one inch long in small cavity; suture shallow; skin thin; color dark purple with blue bloom.

FLESH: free stone; color greenish yellow; texture fairly juicy; flavor sweet, good.

QUALITY: dessert fair; cooking very good.

VALUE: market first class.

SEASON: September.

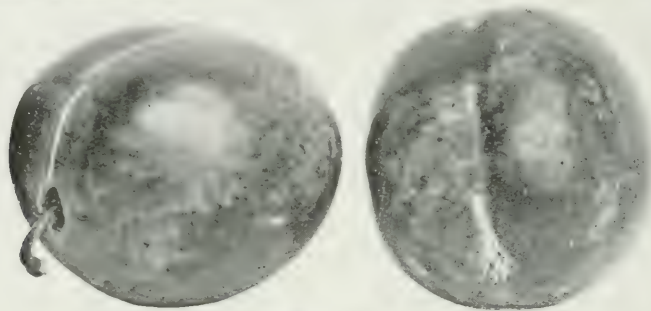
IMPERIAL GAGE.

An excellent preserving or canning plum, but not very popular for the commercial orchards.

ORIGIN: Flushing, Long Island.

TREE: vigorous: productive: hardy: class Domestica.

FRUIT: size medium or below: form oval: color green tinged with yellow: dots greenish: bloom whitish: stem three-quarters of an inch long: suture shallow: skin tough.



IMPERIAL GAGE.

FLESH: mostly free; color greenish yellow; texture juicy, melting; flavor rich, excellent.

QUALITY: dessert good; cooking best.

VALUE: market first class.

SEASON: early September.

KINGSTON.

A valuable market variety.

ORIGIN: Province of Ontario.

TREE: vigorous and productive.

FRUIT: size medium to large, form oval; color dark purple, with thin blue bloom; stem slender, about five-eighths of an inch long, inserted in a small, deep cavity; suture shallow; apex a small point.

FLESH: color yellowish green; flavor tart.

QUALITY: cooking, very good.

SEASON: early September.

LOMBARD.

One of the most prolific of the old varieties, and, until recently, considered the most profitable. Of late, however, the price of Lombard plums has so far declined that other varieties are being planted in its place.

ORIGIN: raised from seed by Judge Platt, Whitesboro, N. Y.: introduced to public by M. Lombard, of Springfield, Mass., after whom it was named. Previously it was called Bleeker's Scarlet.

TREE: very productive; very vigorous; very hardy; inclined to overload, and the fruit needs thinning.

12a F. O.



LOMBARD.

FRUIT: medium size; form roundish, oval, slightly flattened at the ends; color purplish red, paler in shade; bloom heavy; suture traceable; stalk slender, about three-quarters of an inch, set in a broad, funnel-shaped cavity; subject to rot when overloaded.

FLESH: deep yellow; texture firm, juicy; flavor pleasant; cling stone.

QUALITY: dessert, good; cooking, very good.

VALUE: second class for market.

SEASON: late August to early September.

McLAUGHLIN.

A fine plum for home uses; a little tender for distant shipment.

ORIGIN: with James McLaughlin, Bangor, Maine.

TREE: vigorous; fairly productive; an early and an annual bearer; class Domestica.

FRUIT: size medium to large; form roundish oval, flattened at the ends; stem five-eighths of an inch long, in a small shallow cavity; apex small point in a slight depression; suture traceable; skin thin; color greenish yellow, mottled with red; bloom delicate whitish.

FLESH: semi-cling; pit small; color clear yellow; texture tender, very juicy; flavor rich, sweet and excellent.

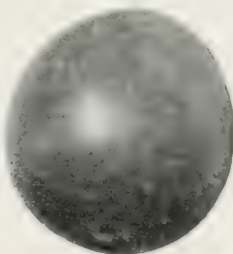
QUALITY: dessert very good to best; cooking good.

VALUE: market first class; rather tender for distant shipments.

SEASON: September.

MANKATO.

"Fruit above medium to large, roundish; cavity narrow, medium depth; suture a distinct line; apex rounded; color deep, dull red with a moderately heavy bloom; dots numerous, small, yellow; bloom rather heavy; skin thick, tough; flesh deep yellow, juicy, sweet, good flavor not astringent; stone large, flat, semi-cling; quality good. Season late August to early September. Better in quality than Bixby, but not as handsome. A good early plum. Promising." (*Mason*).



MANKATO.

MARU.

Productive and early, but too small and poor in quality to be recommended.

ORIGIN: imported by L. Burbank in 1885.

TREE: habit spreading; fairly vigorous; very productive.

FRUIT: size small; form roundish; cavity narrow, abrupt; stem short and stout; suture scarcely traceable; bright red, turning dark red; bloom thin.

FLESH: cling; color yellow; texture tender, juicy; flavor pleasant.

QUALITY: dessert fair; cooking fair.

VALUE: market second class.

SEASON: mid-August.

MILTON.

A seedling of Wild Goose; valuable for its hardiness.

ORIGIN: Iowa.

FRUIT: size medium; roundish oval, or oblong; color dark red, with numerous dots.

FLESH: texture melting, firm.

QUALITY: fair.

VALUE: market second class.

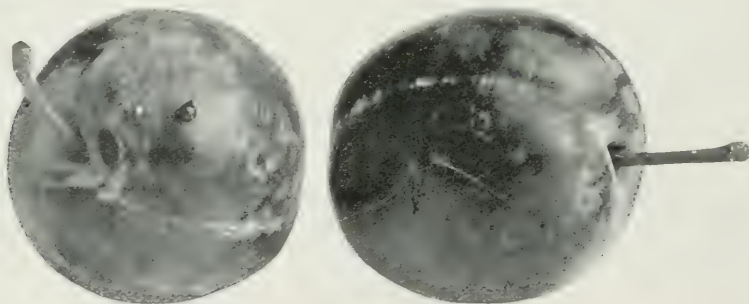
SEASON: a week earlier than Wild Goose.

MONARCH.

A profitable commercial variety; a good shipper.

ORIGIN: England.

TREE: a vigorous grower; habit upright; an early, regular and abundant bearer; class Domestica.



MONARCH.

FRUIT: large; roundish ovate; color dark purple with heavy bluish bloom; stalk about seven-eighths of an inch long, stout, in a moderately deep cavity; suture broad, shallow.

FLESH: color yellow; texture firm; flavor sweet, slightly acid.

QUALITY: very good for all purposes.

VALUE: market first class.

SEASON: late September.

OGON.

Somewhat irregular in size, but its earliness, just following Red June and Willard, make it of value to the plum grower.

ORIGIN: imported from Japan by H. H. Berger & Co., of California.

TREE: class Japan; habit spreading; fairly vigorous; fairly productive.



OGON.

FRUIT: form roundish, irregular; size medium; color yellow; bloom slight, whitish; stem half an inch long in a deep narrow cavity; suture deep or shallow, half round; apex blunt.

FLESH: free; color yellow; texture firm with a little juice; flavor flat.

QUALITY: poor for dessert; fair for cooking.

VALUE: market first class.

SEASON: mid August.

POND. (*Pond's Seedling*).

A beautiful and showy plum, but not much planted in the commercial orchard; somewhat subject to rot.

ORIGIN: England.

TREE: vigorous; moderately productive.

FRUIT: size very large; form obovate, tapering toward the base; skin thick, purple, with purplish bloom and numerous brown dots.

FLESH: color yellow; texture juicy; flavor pleasant.

QUALITY: very good.

VALUE: market first class only for its susceptibility to rot.

SEASON: mid September.

PRUNE D'AGEN.

"Medium in size, obovate, somewhat necked; color reddish purple with heavy blue bloom and numerous small dots; stalk one inch long, curved, in small cavity. Flesh greenish yellow, rich, very good to best; nearly free from pit. Grown largely on the west coast for drying, but in States to the east and south to a less extent. Domestic." (*Budd*).

PURPLE EGG. (*Hudson River Purple Egg*).

A good commercial variety, especially for preserving.

ORIGIN: on the banks of the Hudson River, New York State, exact locality not known.

TREE: upright, vigorous grower, hardy and very productive.

FRUIT: size large; form ovate, often necked; color of skin, dark, rich red to purple; stem long in a deep cavity; suture shallow; bloom thin; clings to stone.

FLESH: color, greenish yellow; texture firm; flavor brisk acid.

QUALITY: dessert poor; cooking, very good.

SEASON: late September.

QUACKENBOSS.

A good market plum; one of the best for distant shipment.

ORIGIN: at Albany, N. Y.; introduced by Mr. Quackenboss, of Greenbush, N. Y.

TREE: very vigorous; habit upright; hardy; fairly productive.



QUACKENBOSS.

FRUIT: large; form roundish oval; color dark purple, with blue bloom; stem of medium length set in a very slight cavity; suture traceable.

FLESH: semi-cling; color greenish; texture rather firm; flavor sprightly.

QUALITY: dessert fair; cooking good.

VALUE: market first class.

SEASON: late September.

RED JUNE. (*Red Nagate of Thomas*).

The earliest good plum grown, and one of the most profitable of the Japanese varieties.



RED JUNE.

ORIGIN: Japan; introduced to the public in 1893, by Stark Bros., Louisiana, Mo., who gave it the name of Red June. The Japanese name was "Shiro Smomo."

TREE: hardy and vigorous, forming a symmetrical top; an early and fairly abundant bearer; should be planted with such varieties as Burbank, Abundance or Chabot, to secure cross fertilization.

FRUIT: form, roundish conical; apex pointed; size, medium; suture distinct; skin thick, tenacious; color bright red, deepening to dark red when fully ripe, with light bluish bloom; stem one-half an inch long; cling.

FLESH: color yellow; texture somewhat juicy, moderately firm; flavor agreeable.

QUALITY: dessert good; cooking, very good; an excellent substitute for the Damson.

VALUE: market first class.

SEASON: late July to early August.

REINE CLAUDE. (*Reine Claude de Bavay. Green Gage*).

The Reine Claude and several varieties of the Green Gage type are of especial value for culinary purposes. For pies, sauce or canning purposes, they seem to be growing in demand year after year, and no collection of plums for the home garden is, therefore, complete without a tree or more of this or some other variety of this family. With Ontario fruit growers, the most popular Gage is the Reine Claude de Bavay, commonly known among them as Reine Claude, which name is also an old synonym of the Green Gage. In the catalogue of the American Pomological Society it is called Bavay. The fruit of this later variety is in good demand among canners, and brings a fair price in our markets.

ORIGIN: this type of plum was brought from Italy to France about the year 1500 by Queen Claudia, wife of Francis I., after whom it was named Reine Claudia. Later, some trees were brought to England by a family named Gage, but the label on these trees being lost, the gardener called them Green Gage. Hogg, the English pomologist, however, tried to prove that this plum had been introduced into England before this time under the name of Reine Claude, and hence arose considerable confusion of names.



REINE CLAUDE.

TREE: productive; hardy, a slow grower.

FRUIT: roundish; size medium; skin greenish, yellowing towards maturity, with a thin whitish bloom and a few red dots; stem three-quarters of an inch long, set in a small, abrupt cavity; suture traceable.

FLESH: color pale green; texture melting and juicy; flavor rich, sweet and excellent; pit mostly free.

QUALITY: cooking or canning, best; dessert very good.

VALUE: home market first class.

SEASON: mid to late August.

SATSUMA. (*Blood*).

One of the most satisfactory of the Japan plums; commercially valuable in the Niagara district. Highly esteemed for canning, and for jelly.

ORIGIN: imported by Luther Burbank from Japan to America in 1886; called "Blood" from the blood red color of the flesh.

TREE: habit spreading; fairly vigorous; ordinarily very productive; self sterile, and should be planted with other varieties.



SATSUMA.

FRUIT: oblate, slightly conical; size large; stem about three-quarters of an inch in length, stout, set in a deep cavity; suture traceable; skin thick; color dark red, with whitish bloom and many dots.

FLESH: cling; color dark red; texture firm; flavor pleasant when well ripened; a little acid.

QUALITY: cooking very good.

VALUE: market first class.

SEASON: late September.

SHIPPERS PRIDE. (*Pride*).

An excellent market plum; a good shipper and fine for canning.

ORIGIN: New York State.

TREE: very vigorous; very hardy; very productive.

FRUIT: size large; form roundish oval; color dark purple.

FLESH: firm, juicy; flavor sweet.

QUALITY: dessert fair; cooking good; excellent for canning.

VALUE: market first class, being a fine shipper.

SEASON: early to mid September.



SHIPPERS PRIDE.

SHROPSHIRE DAMSON.

A small plum, very highly valued for jam and for preserves: much sought after by those who know its value.

ORIGIN: Shropshire, England.

TREE: upright, fairly vigorous, quite productive.

FRUIT: small, oval; color dark purple, with blue bloom; stalk half an inch long, no cavity; suture none.

FLESH: nearly free from stone; texture melting, juicy; flavor rich, acid.

QUALITY: dessert fair; cooking very good to best.

VALUE: market first class

SEASON: late.

SIMON. (*Prunus Simoni*, *Simonsi* of Thomas, *Simon's Plum*).

A distinct species of stone fruit, having characteristics of both the peach and the plum. It has been tested in Ontario since 1888, and has not realized the expectations of planters who were led to expect in this fruit a substitute for the peach where the latter fruit was uncertain. It has proven itself worthless in the commercial orchard, and valuable only as a curiosity.

ORIGIN: northeastern China, introduced to France by Eugene Simon and disseminated by Simon Bros. of Metz, Alsace. Fruited at Cornell University in 1886, and at St. Catharines, Ont., in 1887. It was placed in the plant distribution list by the Fruit Growers' Association in 1890.

TREE: upright, slender, lacking in vigor, not productive.

FRUIT: large; form round transversely and flattened longitudinally; color dark maroon, with a perceptible bloom; stalk half an inch long, stout, set in a deep cavity; suture distinct; stone smooth, clings tightly to the flesh.

FLESH: orange color; texture, tough and juicy; flavor often bitter, sometimes fairly agreeable.

QUALITY AND VALUE: very poor.

SEASON: early August.

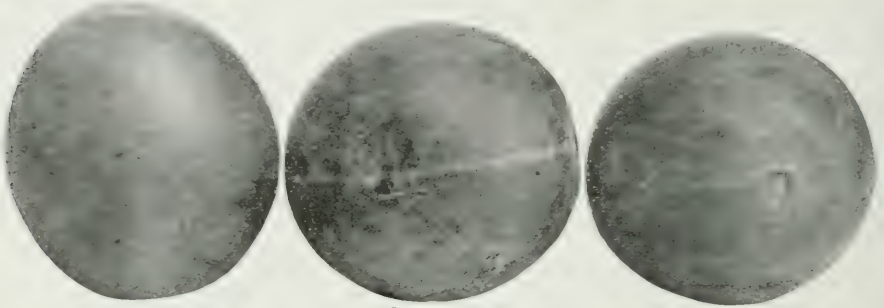
ADAPTATION: to the peach sections.

SMITH ORLEANS.

"Fruit large to very large, oval, rather widest toward the stalk, a little irregular, with a strongly marked suture on the side; stalk quite small and slender, a little more than half an inch long, inserted in a deep narrow cavity; skin reddish purple; covered with a deep blue bloom; flesh deep yellow, a little firm, very juicy, with a brisk rich vinous flavor, and adheres to the stone; good to very good; late August, growth very vigorous." (*Downing*).

STODDARD.

"Fruit large to very large; roundish; cavity narrow, shallow; suture a distinct line; apex rounded; color deep yellow, almost entirely covered with deep purplish red; dots fairly numerous, small yellow; bloom light, skin thick, tough, slightly astringent; flesh deep yellow, juicy; stone medium size, broad, flat, cling; sweet, good rich flavor; quality very good. Season late September. One of the largest and best flavored Americana plums." (*Macoun*).



STODDARD.

VICTORIA. (*Sharp; Sharp's Emperor*).

A fine dessert plum for the amateur's garden. It has been long known as *Victoria*, and indeed by no other name in Ontario.

ORIGIN: Sussex, England.

TREE: vigorous and productive.

FRUIT: size large, form oval; suture distinct; color of skin light reddish-purple; stem nearly one inch long in a moderately deep abrupt cavity; dots whitish and pinkish; clingstone.

FLESH: yellow; flavor pleasant.

SEASON: early in September.

QUALITY: very good.

ADAPTATION: considered a success at our Lake Huron station, in Bruce County.



VICTORIA.

WASHINGTON.

Not productive enough, nor good enough a shipper to be popular in the commercial plum orchard; but, on account of its large size, beauty and excellence of quality, a universal favorite for the dessert table.

ORIGIN: New York City, as a sucker from a grafted tree, which was purchased from a market woman by a Mr. Balmer. He first fruited it in 1818, and the plum was at first called Balmer after him.

TREE: a strong, vigorous grower; fairly productive; foliage remarkably large, broad and glossy.

FRUIT: size large; form round oval; suture traceable, very distinct near the stem; color dull yellow, changing to deep yellow, marked with crimson dots and covered with pale bluish, grey bloom; stem three-quarters of an inch long, set in a wide, shallow cavity.



WASHINGTON.

FLESH: yellow; texture firm; flavor rich, sweet and luscious.

QUALITY: dessert, very good; cooking, very good.

VALUE: home market, first class.

SEASON: late August.

WHITAKER.

The best of its class fruited at our St. Lawrence station.

ORIGIN: a seedling of Wild Goose; raised by J. T. Whitaker, Texas; closely resembling its parent.

TREE: vigorous; rapid grower; spreading habit; healthy; foliage bright green, free from shot hole fungus; late bloomer; class Chickasaw.

FRUIT: oval; size medium; cavity shallow; suture traceable; color bright red, with many white dots and thin bluish bloom; skin thin.

FLESH: color yellow; texture moderately firm, juicy; flavor sweet and good.

QUALITY: good.

VALUE: market second class.

SEASON: September.

WICKSON.

Among the largest and finest of the Japan plums, but not productive enough to be profitable as a market variety. Introduced with a great flourish and largely planted, but in most cases it has proven a disappointment.

ORIGIN: grown from seed of Kelsey by Luther Burbank, of Santa Rosa, Cal.; from its habit the tree appears to have some relation to *Prunus Simoni*.

TREE: habit very upright, bearing fruit mostly on fruit spurs; hardy; blooms early and abundantly, but sets very little fruit; should be planted with such productive sorts as Burbank for cross pollination; class Japanese.

FRUIT: form oblong conical, apex a point; size large to very large; skin thick; color yellow, mostly covered with rich brownish red; bloom thin; stem stout; cavity large, deep, abrupt; suture very decided from base to apex.

FLESH: semi-cling; color yellowish, translucent with yellow veins; texture firm for shipment, but tender and juicy when fully ripe; flavor sweet, rich, aromatic.

QUALITY: very good for all purposes.

VALUE: market first class.

SEASON: mid September.

WILD GOOSE.

"Fruit oval; size medium to large; cavity shallow; stem medium long; suture a line; color bright, clear red; dots many, white, conspicuous; bloom thin, bright bluish; skin thin, but rather tough; stone small to medium, oval, pointed, cling; flavor sweet; quality fair to good; season early; origin Columbia, Tennessee." (*Waugh*).

WILLARD.

A profitable market plum on account of the early season of ripening its fruit, but too poor in quality to receive much commendation, and not very productive. ,

ORIGIN: Japan.

TREE: vigorous; rather spreading in habit; fairly productive.

FRUIT: size medium, sometimes above; form roundish oblong; color greenish, partly overspread with dull red; suture clearly traceable; apex elevated not pointed; bloom thin, whitish.

FLESH: yellowish; moderately firm; not very juicy; semi-cling; flavor poor.

QUALITY: dessert poor; cooking fair.

VALUE: first class in its season for market.

SEASON: early August.

WOLF.

"Fruit large, roundish; cavity narrow, shallow; suture shallow, fairly distinct, not depressed; apex rounded; color deep red; dots fairly numerous, small, yellow, distinct;



WOLF.

bloom moderate; skin thick, tough; flesh deep yellow, juicy, sweet, rich, good flavor; stone above medium size, outline oval, considerably flattened, cling; quality good; season early to mid September. One of the best." (*Macoun*).

WYANT.

"Fruit large, oblong, flattened; cavity narrow, deep; suture a distinct line; apex almost pointed; color deep red; dots numerous, small, purple; bloom medium; skin rather thick, somewhat tough, astringent; flesh deep yellow, moderately juicy, fairly sweet; stone large, much flattened, oval, semi-cling, almost free; quality medium. Season mid September. Quality not good enough. This plum is highly recommended in the Western States, but has not proven so good as some others here. (Ottawa)." (*Macoun*).

YELLOW EGG (*White Magnum Bonum*).

A profitable commercial variety, on account of its large size and fine appearance, but susceptible to the plum rot and inclined to drop before maturity. Good for canning purposes.

ORIGIN: Europe.

TREE: vigorous, spreading, and very productive.



YELLOW EGG

FRUIT: size large to very large; form egg shaped with distinct suture on one side; skin thick, adherent to flesh; color yellow with whitish bloom; stalk nearly an inch long, inserted in a small cavity, with a fold about its base; pit long, pointed, cling.

FLESH: yellow; texture firm, juicy, coarse; flavor subacid, becoming sweet when very ripe, but ordinary.

QUALITY: dessert poor; cooking good.

VALUE: home market first class.

SEASON: late August.

THE QUINCE.

As there is only a limited demand for quinces in Canada, this fruit is not largely grown. It is somewhat tender, but can be grown commercially wherever the peach succeeds. Some quinces are, however, produced for home consumption as far east as the Bay of Quinte.

The culture of the quince is somewhat similar to that of dwarf pears. The soil most suitable is a friable clay loam, well drained. Three year old trees are planted from fourteen to fifteen feet apart each way. The trees are pruned with a somewhat open top as the dwarf pear, the head starting from near the ground. If the trees make rapid growth severe heading in should be practised to get stockier trees and to have the fruit better distributed. Good cultivation is necessary in the production of the quince as with other fruits.

The quince makes a handsome ornamental tree where it can be grown, the abundant white bloom in the spring and the golden fruit in the autumn rendering it a striking object wherever planted.

VARIETIES RECOMMENDED.

GENERAL LIST. APPROVED BY THE BOARD OF CONTROL.

Fuller, Orange (the leading market variety in Ontario), Champion (for Southern Ontario only as it ripens too late for other sections).

DESCRIPTION OF VARIETIES.

BENTLEY.

A variety grown largely for market in Maryland, and in Ontario it is gaining in favor.

TREE: thrifty; productive.

FRUIT: large; form roundish; skin yellow with heavy down.

QUALITY: excellent.

VALUE: market first class.

SEASON: early October.

CHAMPION.

An American quince of recent origin.

TREE: an upright grower, taller than the Orange.

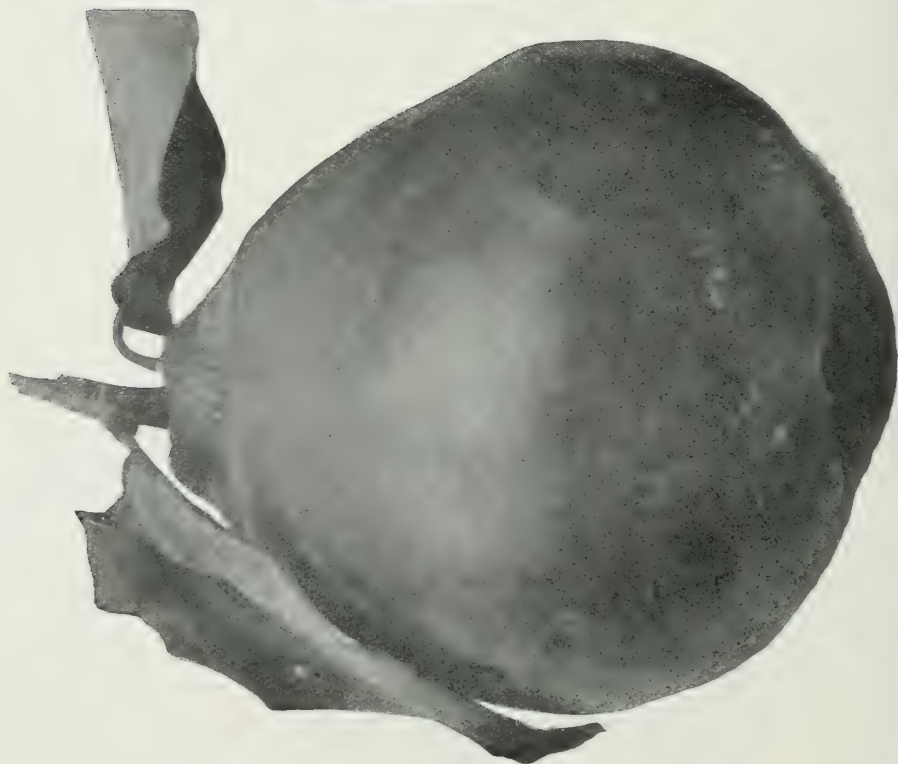
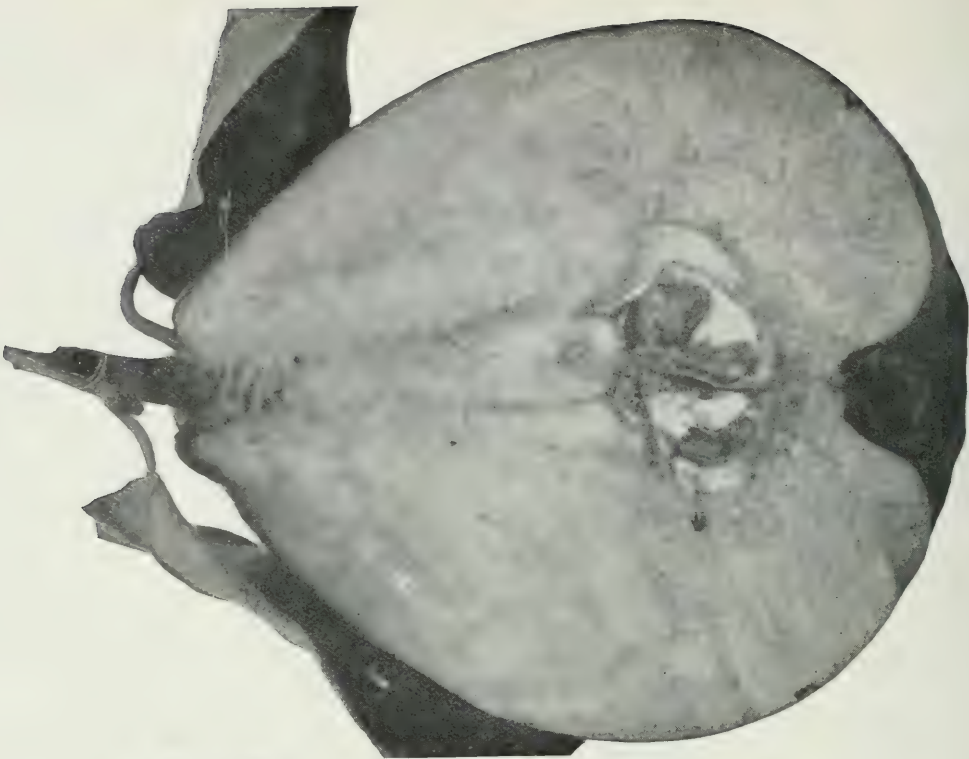


FRUIT: large, distinctly pear-form, furrowed about the top, generally remaining greenish yellow upon the tree; conspicuously covered with a floccose wool or fuzz.

SEASON: mid winter.

ADAPTATION: ripens well in Southern Ontario, but would be too late farther north.





FULLER

FULLER.

ORIGIN: named after Mr. A. S. Fuller, of Ridgewood, N. J., who noticed it fruiting on a neighbor's grounds in about the year 1870, took some cuttings and introduced it to public notice.

TREE: a good grower and showy both in fruit and flower.

FRUIT: large; distinctly pyriform in shape, sometimes with an elongated neck, somewhat ribbed; color rich yellow; calyx set in a deep wide basin.

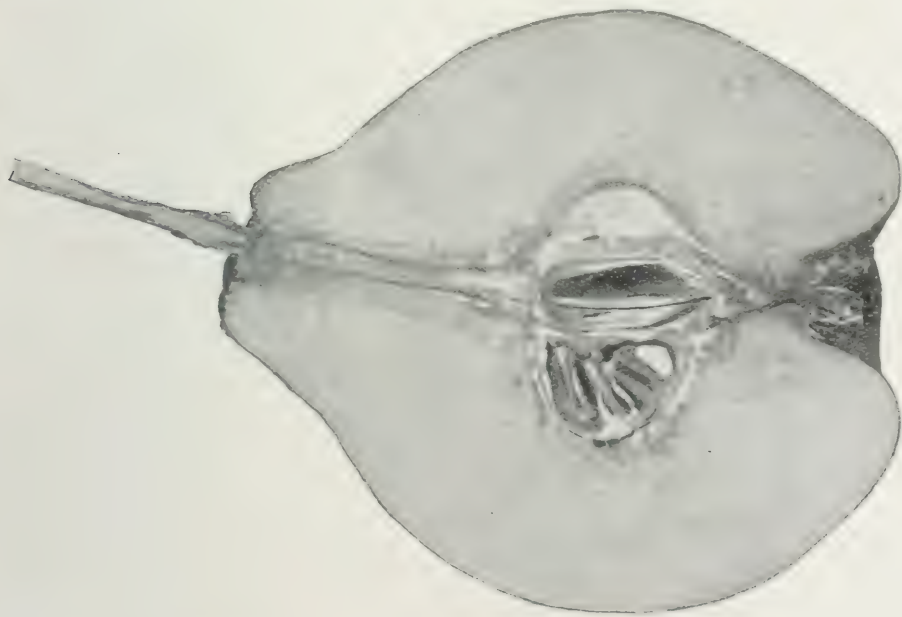
FLESH: tender in texture; flavor good.

VALUE: market first class.

SEASON: late September.

ORANGE. (*Apple*).

The leading market variety of quince in Canada. Previous to 1870, this and the Angers were the only varieties of quinces known in Ontario, the former as a stock for budding dwarf pears, and the latter as a standard market variety. The Orange quince succeeds admirably in the Niagara peninsula, ripening well, taking on a beautiful rich golden color, and reaching a fine large size, either on clay or sandy loam. In old days this variety brought \$6 or \$7 per barrel in Toronto market, but the prices are now much lower.



ORIGIN: Southern Europe.

TREE: a slow grower, bushy, seldom attaining a height of more than twelve or fifteen feet; hardy, will endure neglect but responds well to good cultivation and manure; delights in moist land, without standing water; fairly productive.

FRUIT: large and weighing from eight ounces to a pound; form somewhat like an apple, but with protuberance about the stem instead of a depression; skin golden yellow at maturity, with often a little greenish or russet color about the stem, which is set in a narrow cavity; calyx large segment, which are leaf like, in a large deep, corrugated basin.

FLESH: tender in texture and good in flavor.

VALUE: limited demand in Canadian markets.

SEASON: late September to early October.

THE GRAPE.

There is no more popular fruit than the grape, and, owing to the rapid increase in population during recent years, the demand for grapes is constantly growing. For this reason the planting of grapes, which was in a large measure suspended for a few years, is steadily increasing, many vineyards now being established annually.

The grape requires a comparatively dry hot season for the development of good flavor and the perfect ripening of the fruit, and as most of the cultivated varieties will not stand very low temperatures unless protected, the grape succeeds best in the most southern parts of the Province, the commercial vineyards being confined almost entirely to the Niagara Peninsula, and to the district bordering Lake Erie. The grape can, however, be grown successfully over a much wider area than this, and where the summer temperature is fairly high and spring and early autumn frosts are rare, large quantities of grapes are grown for home consumption. Hence the early varieties of this fruit may be ripened pretty generally over the Province as far north as latitude 45 degrees and probably further.

A southern or south-eastern slope, if it can be procured, is preferable for the grape, as this fruit will ripen quicker with this exposure, but the site is not so important in the best grape districts as it is further north. A site should, however, be chosen which will not be subject to local frosts. In the north a sandy loam is much to be preferred, as if well drained it will be the warmest, and all the heat that can be obtained is needed. In the warmer portions of the Province grapes succeed admirably on the clay loams, and if well drained these are considered the best. The soil should be thoroughly prepared as for other fruits. The best vines for planting are two years old, but some strong growing varieties make good plants in one year. Strong growing varieties require more space in a vineyard than those less vigorous, but an average distance of ten feet apart each way is perhaps the most satisfactory. The plants should be set a little deeper than they were in the nursery. With grapes it is better to err on the side of deep than shallow planting. The young vine should be cut back to within one or two buds when set. To encourage strong growth, cultivation should be thorough in the vineyard until the vine begins to bear well. At the close of the first season and before the growth begins the following spring, the vine should be again pruned back to one or two strong buds. During the second season, only two canes are permitted to grow in order that these may become as strong as possible. Before growth begins in the third year it will be necessary to put down the trellis. If the Kniffen system is adopted two wires will be sufficient, but if other methods are followed, three are usually necessary. The Kniffen system of training is more general in the grape districts than any other, mainly for the reason that by this method the least labor is involved. If two canes were left during the second season's growth, the weaker is removed, the other is tied upright to the two wires, the lower one being about 3 feet 6 inches from the ground, and the upper about 2 feet higher. Shoots will be thrown out along this main trunk, all of which are allowed to grow throughout the season.

Before growth begins in the spring of the fourth season all the canes are cut away except four. Two of these are extended one on each side of the main trunk along the upper wire and tied to it, and two on each side of the main trunk along the lower wire, at the same time heading back the upper canes to eight or nine buds and the lower to six or seven. No summer pruning is usually practised

with this system, the growing shoots falling over the wires and attaching themselves there, often making very rampant growth, so much so that the tips are sometimes lopped off with a pruning hook.

The vine should bear a full crop this season, which is the fourth from planting. Before growth starts in the fifth season all canes are again removed except four, and as these could not very well be obtained in line with the wires if taken from the main trunk, the canes are utilized which spring from the base of the canes which were left the year before. This same system is adopted year after year. In time such a large stub develops at the point where the new canes are taken each year that it becomes necessary to remove these and take new canes from the main trunk. A good supply of new wood is required each year in grape growing, as fruit is produced only near the base of the previous season's growth. About forty strong buds or even less are sufficient to give a profitable crop of most varieties.

For the north quite a different system is necessary, as the vines have to be covered with soil in the winter to protect them. On this account the arms have to be trained low so that they may be covered easily. The best system which has been found where such conditions prevail in Ontario, is a modification of the "High Renewal." By the "High Renewal" system new wood is obtained from near the ground every year and several canes trained in a somewhat fan shape. This system is adopted in some parts of New York State, where vines do not have to be covered. By a modification of this system two arms are left for two or three years. Three wires are required, the lowest being about eighteen inches from the ground, and the others about two feet apart. The two canes which have been made during the second season's growth, as previously described, are both saved. They should start from the main stem as near the ground as possible, and are tied to the wire in opposite directions. The shoots which are made the third season are tied upright to the wires and spread as evenly as possible. Lateral shoots should be removed. Before winter all the canes made that season should be headed back to within one or two buds of the two main arms, and just before winter sets in they should be bent down and covered with a few inches of soil. In fact, the vine should be covered each winter from the time it is set. Vines should be kept covered in the north as long as possible to prevent injury from spring frosts. At Ottawa, the vines are not uncovered until the end of the first week or beginning of the second week of May.

In the fourth season after planting the shoots are again trained upright and tied to the wires. Laterals are removed and any other shoots which make the vine so crowded that the fruit will not obtain plenty of light and sunshine. The mistake is often made of leaving too many shoots to grow, thus preventing the perfect ripening of the fruit. Forty strong shoots are quite sufficient to produce a good crop of fruit, although some varieties will stand a few more.

As arms get older they become more difficult to lay down, hence it is found advisable to remove the arms every two or three years and replace them with new ones. The arms may be renewed in alternate years, and this is often desirable, as the buds on one arm are sometimes destroyed by winter or by spring frosts. The only important difference between this system and the horizontal arm is that in this the arms are not permanent. It resembles the "High Renewal" from the fact that new wood is obtained frequently from the main stem near the ground.

Grapes require considerable potash, hence fertilizers containing a high percentage of this should be used rather than nitrogenous manures. Cover crops will usually supply all the nitrogen that is required.

Grapes should not be picked until they are quite ripe, as they do not ripen after they leave the vine. It is believed that the consumption of grapes would

be much greater in the cities and towns if fruit growers would not pick and ship the fruit when it is green.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Commercial and Domestic:

Black: Moore, Campbell, Worden, Concord, Wilder.

Red: Delaware, Lindley, Agawam, Vergennes.

White: Niagara, Diamond.

For Northern Sections:

Black: Champion, Moore, Campbell, Worden, Wilder.

Red: Moyer, Brighton, Delaware, Lindley.

White: Winchell, Diamond.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Wentworth District: By M. Pettit, Winona, Ont.

Commercial:

Black: Champion, Campbell, Worden, Concord.

Red: Delaware, Lindley, Agawam, Vergennes, Catawba.

White: Niagara, Diamond.

Niagara District: By Linus Woolverton, Grimsby, Ont.

Domestic: Moyer, Campbell, Worden, Delaware, Lindley, Brighton, Wilder, Agawam, Requa.

DESCRIPTION OF VARIETIES.

ALICE.

A good grape but a little late to be very popular for market purposes.

ORIGIN: New York State.

VINE: very vigorous; productive.

BUNCH: roundish; shouldered; compact.

BERRY: size small to medium; round; color dark wine with light bloom.

FLESH: tender pulp, juicy; color light green; flavor vinous, aromatic, pleasant.

QUALITY: dessert good.

VALUE: second class for market.

SEASON: early October.

BACCHUS.

A good wine grape.

ORIGIN: seedling of Clinton, raised by J. H. Ricketts, Newburgh, N. Y.

VINE: vigorous; free from mildew; productive.

BUNCH: size medium; compact; shouldered.

BERRY: size small; round; black with blue bloom.

FLESH: texture juicy; flavor sprightly, superior to Clinton.

QUALITY: dessert fair.

VALUE: second rate for market.

SEASON: late; cannot be depended upon to ripen north of lake Ontario.

AGAWAM. (*Rogers' 15*).

One of the leading varieties for profit, but in some sections subject to mildew and rot.

ORIGIN: by E. S. Rogers, Salem, Mass.

VINE: a strong grower; very productive; self fertile: wood long jointed, stout, should have long pruning.

BUNCH: large, compact, shouldered.

BERRY: large; skin thick; color brownish red.

FLESH: tender; flavor sweet, sprightly, very good.

QUALITY: dessert very good.

VALUE: Market, first class.

SEASON: soon after that of Concord.



AGAWAM.

BARRY. (*Rogers' 40*).

An excellent exhibition grape; one of the most attractive of Rogers' hybrids: but not equal to Wilder for the commercial vineyard.

ORIGIN: a hybrid from Black Hamburg and Mammoth Sage, raised by E. S. Rogers, of Salem, Massachusetts.

VINE: vigorous; healthy; productive, self sterile and needs mixed planting; sometimes drops its leaves before maturity of the fruit.

BUNCH: medium; form short, compact, rather broad.

BERRY: large; roundish; color black with blue bloom.

FLESH: tender; flavor sweet, pleasant.

QUALITY: dessert good

VALUE: market first class; a good shipper.

SEASON: mid September to October.

BRIGHTON.

The fine size of its bunches and the excellence of its flavor as a dessert grape gave promise, in its first introduction, that the Brighton would be a popular commercial grape in Ontario; but in this we have been disappointed, because of its susceptibility to mildew, and its poor shipping quality. The latter point is of importance to our Ontario fruit growers, who look forward to the great Northwest as one of the best

markets for the product of their vineyards. As a dessert grape the Brighton is worthy of a place in every fruit garden which is planted for home uses.

ORIGIN: raised by Jacob Moore, Brighton, N.Y.; a cross between Concord (Labr) and Diana Hamburg (Vinifera).

VINE: vigorous; semi-hardy; productive; somewhat subject to mildew; leaves large, thick, dark green; pollen sometimes defective, and the vine should have other varieties which are good pollenizers planted near it.

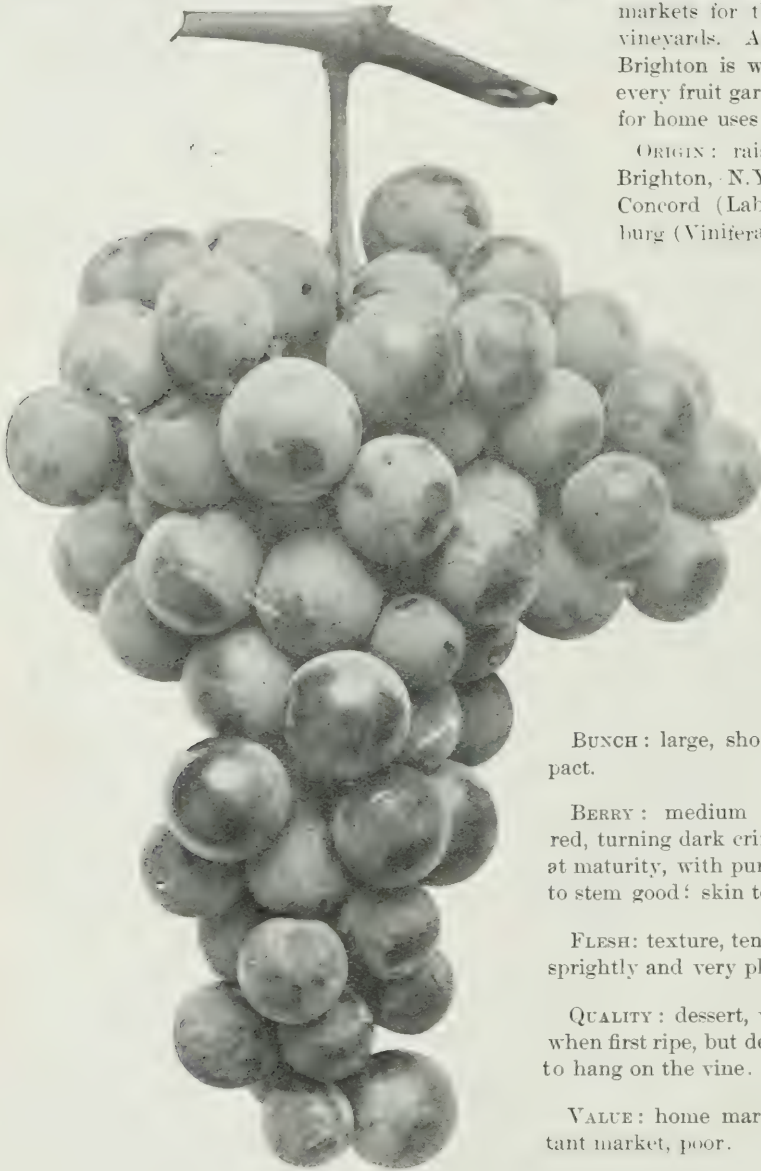
BUNCH: large, shouldered, fairly compact.

BERRY: medium in size; color light red, turning dark crimson or almost black at maturity, with purple bloom; tenacity to stem good; skin tender.

FLESH: texture, tender and juicy; flavor sprightly and very pleasant.

QUALITY: dessert, very good, at its best when first ripe, but deteriorates if allowed to hang on the vine.

VALUE: home market, very good; distant market, poor.



BRIGHTON.

SEASON: medium; not a long keeper.

CATAWBA.

One of the best of wine grapes, and highly esteemed for dessert.

ORIGIN: a native of North Carolina, and takes its name from the Catawba river.

VINE: vigorous; productive; succeeds well in sandy loam: canes long, with few laterals.

BUNCH: medium sized; moderately compact; shouldered.



CATAWBA.

BERRY: large; round; deep red with lilac bloom; skin moderately thick.

FLESH: texture pulpy, juicy; flavor sweet, aromatic, musky.

QUALITY: dessert very good; wine best.

VALUE: market first class when well ripened.

SEASON: late; does not always attain full maturity even in the southern parts of the Province.

CAMPBELL.

(Campbell's Early.)

This grape is claimed to be an improved Concord, and is very promising as an early market variety.

ORIGIN: Ohio, by G. H. Campbell; the product of different crosses from Hartford, Concord, and Moore's Early, through Muscat Hamburg. Introduced in 1896.

VINE: vigorous, healthy and productive.

BUNCH: large shouldered.

BERRY: large; skin black, with thin blue bloom, tough; flavor rich and sweet without foxiness; flesh meaty, sweet, tender; seeds small, separate easily from the pulp; hangs well to vine.

QUALITY: fine for dessert.

VALUE: first-class for market.

SEASON: about the same as that of Moore Early.



CAMPBELL.

CHAMPION.

Widely planted for market because of its early coloring and apparent early ripening, but so sour and so poor in quality, as usually sold on the market, that it has seriously lessened the demand for Concord grapes, which follow it in season.

ORIGIN: New York State, about 1873; first sold as Talman's Seedling.

VINE: vigorous; healthy, not subject to mildew; very productive.

BUNCH: size medium; shouldered.



CHAMPION.

BERRY: size medium; form round; color bluish black; pulpy; acid until very ripe; skin thick.

QUALITY: dessert very poor.

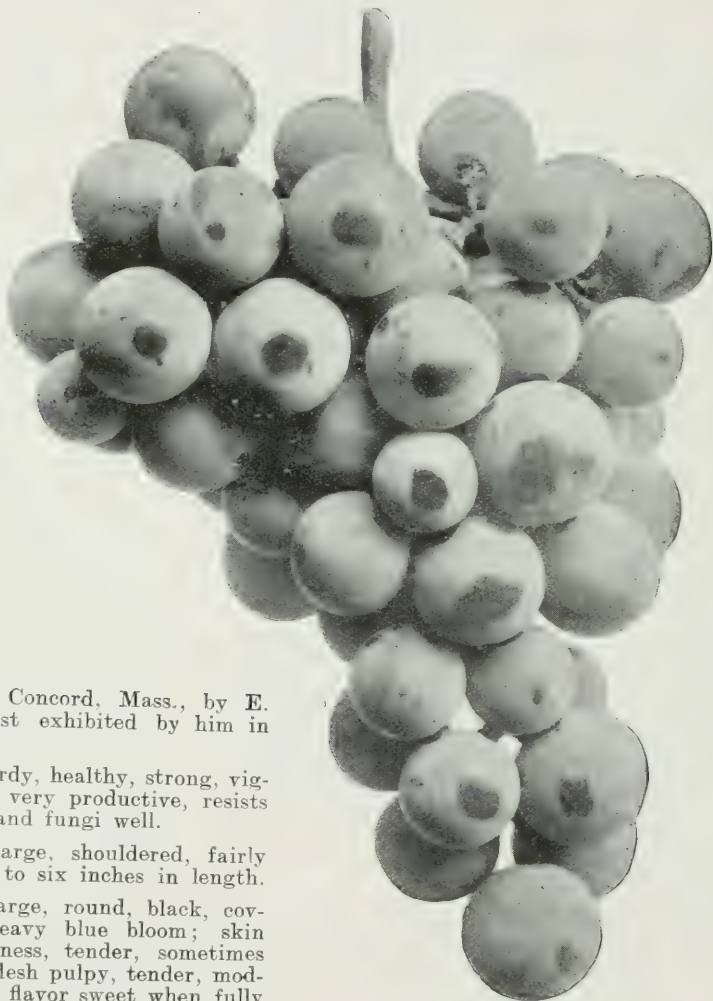
VALUE: Market fair, sells well on its outside appearance before better flavored kinds are on the market.

SEASON: a week or ten days earlier than the Concord, but often well colored two weeks earlier.

CONCORD.

The principal out-door grape grown for market in the Province of Ontario. Probably more than half the vines in the large commercial vineyards of the Niagara district, as well as in Essex and other parts of southern Ontario are of this variety.

The reason of this is (1) its comparative freedom from mildew, (2) its vigor of vine, (3) its productiveness. Four tons to the acre is not an uncommon yield, so that, even when it sells as low as 1½ cents per pound, there is yet a fair return for the investment.



CONCORD.

ORIGIN: Concord, Mass., by E. W. Bull; first exhibited by him in 1853.

VINE: hardy, healthy, strong, vigorous grower, very productive, resists both insects and fungi well.

BUNCH: large, shouldered, fairly compact, five to six inches in length.

BERRY: large, round, black, covered with heavy blue bloom; skin medium thickness, tender, sometimes cracks open; flesh pulpy, tender, moderately juicy; flavor sweet when fully mature, appetizing.

QUALITY: dessert fair.

VALUE: near market, first class; distant market, second class.

SEASON: mid September to October; not a good keeper.

ADAPTATION: general in grape districts.

DELAWARE.

Universally acknowledged to stand at the head of all American grapes in point of quality. For the home garden a few vines of this variety are indispensable, for it is the most excellent of dessert varieties. It is also one of the highest priced grapes in our markets, often bringing more than double the price of the Concord. It is however, not very much grown in our commercial vineyards, because the foliage is badly subject to thrip and the yield is only moderate. On rich deep soils, well drained, however, with high cultivation, thinning and close pruning, it is productive and profitable. It should be planted much closer than the Concord. Vines of the latter variety are usually planted ten feet apart, while the Delaware may be set five or six feet apart.

ORIGIN: unknown. Name from Delaware, Ohio, where in 1855 it was first brought into notice, though not disseminated until ten years later. It was first found in a garden in Frenchtown, N. J. The Bushberg Catalogue thinks it a natural cross between *Labrusca* and *Vinifera*, a native American and a European variety.

VINE: moderate grower; foliage delicate, subject to thrip; wood slender, hardy; a regular, sometimes an abundant bearer.

BUNCH: small, compact, usually shouldered.

BERRY: small; round; skin thin; color a beautiful light red, with whitish bloom, translucent; pulp, sweet, sprightly, aromatic; juice abundant, sweet, vinous.

QUALITY: dessert good.

VALUE: market first class.

SEASON: September

ADAPTATION: general throughout the grape sections.



DELAWARE.

DIAMOND. (*Moore's Diamond*).

A grape that is growing in popularity, and which succeeds in sections farther north than the Niagara.

ORIGIN: Brighton, N. Y., in 1873, by Mr. Jacob Moore, from seed of Concord, fertilized with Iona; just one year after the Niagara was originated at Lockport.

VINE: vigorous and productive, though not equalling the Niagara; foliage much like that of one of its parents, the Concord.



DIAMOND.

BUNCH: large, compact and shouldered.

BERRY: adheres firmly to the stem; color greenish white, yellowing slightly at maturity; pulp tender; flavor juicy, sweet and good.

QUALITY: dessert very good.

SEASON: about one week in advance of the Concord.

ADAPTATION: worthy of trial generally.

EARLY OHIO.

An early market grape.

ORIGIN: a chance seedling raised by R. A. Hunt, Euclid, Ohio.

VINE: healthy; vigorous; productive.

BUNCH: large, compact, often shouldered.

BERRY: medium size; color black, with heavy bloom; tenacious of stem; flavor spicy, pleasant.

SEASON: a few days in advance of Moore Early.

ADAPTATION: not proven.

EARLY VICTOR.

The Early Victor grape colors very early, fully two weeks ahead of Concord, and is fit to gather about ten days before, along with Hartford and Moore Early.

ORIGIN: by John Burr, of Leavenworth, Kansas, in 1870. A seedling of the Delaware.

VINE: very vigorous, very productive and healthy.

BUNCH: shouldered and very compact.

BERRY: medium, round, black, with thick blue bloom, adheres well; pulp tender, juicy, sweet and agreeable; seeds two.

QUALITY: very good for dessert, also very good for making claret wine.

VALUE: first class for home market.

SEASON: early.

EMPIRE. (*Empire State*).

A beautiful white grape, with well formed bunches, which was introduced with great eclat, but has not become very popular in the commercial vineyards of Ontario.

ORIGIN: from seed of Hartford fertilized with Clinton, raised by James H. Ricketts.

VINE: vigorous, healthy, and moderately productive.

BUNCH: size large; shouldered; compact.

BERRY: medium; color white, with thick bloom; pulp tender, juicy, sweet, and agreeable.

QUALITY: dessert, very good.

VALUE: market first class.

GAERTNER. (*Rogers' 14*).

An excellent grape which is gaining in favor.

ORIGIN: hybrid between White Chasselas and a wild Labrusca.

VINE: healthy; fairly vigorous and productive.

BUNCH: medium in size; shouldered.

BERRY: size large; round; color light reddish brown; skin thin.

FLESH: texture moderately tender; flavor sweet, rich, aromatic.

QUALITY: dessert very good.

SEASON: about with Concord.

HARTFORD. (*Hartford Prolific*).

An old variety ripening in advance of Concord, but not popular as a market grape, because it drops its fruit so soon after maturity.

ORIGIN: Raised at Hartford, Connecticut, from seed of Isabella, about 1850.

VINE: hardy; vigorous; very productive.

BUNCH: large; shouldered; rather compact.

BERRY: size medium; round; color black with thin blue bloom; skin thick.

FLESH: whitish; texture pulpy, juicy; flavor foxy.

QUALITY: dessert poor.

VALUE: market second class, because of the fruit dropping from the stems; soon shrivels.

SEASON: a week before Concord.

JANESVILLE.

Valuable only in the colder sections.

ORIGIN: Hartford x Clinton.

VINE: hardy; vigorous; productive.

BUNCH: medium; short; compact; shouldered.

BERRY: size medium; black; skin thick; slight blue bloom.

FLESH: pulpy; color greenish; flavor vinous.

QUALITY: dessert poor.

VALUE: market second class.

SEASON: early.

JESSICA.

An excellent dessert grape for the amateur's garden.

ORIGIN: Canada; a seedling raised by W. H. Read of Port Dalhousie, introduced by Mr. D. W. Beadle of St. Catharines, and first described in the *Canadian Horticulturist* for February, 1884.

VINE: fairly vigorous, hardy and healthy.

BUNCH: shouldered, compact.

BERRY: medium; color yellowish green to white; skin thin; pulp tender, juicy; flavor sprightly, aromatic, sweet and very agreeable, free from foxiness.

QUALITY: very good for dessert.

VALUE: market too small; home uses very good.

SEASON: early.

ADAPTATION: general.

LADY.

A fine early sweet grape for the home garden; not desirable for the commercial vineyard.

ORIGIN: a pure Concord seedling, introduced by G. W. Campbell, of Ohio, in 1874.

VINE: fairly vigorous, slender; healthy; fairly productive.

BUNCH: medium in size; oblong; slightly shouldered.

BERRY: medium to large; round; greenish yellow with white thin bloom

FLESH: pulp tender, juicy; flavor vinous, sweet, slightly aromatic.

QUALITY: dessert good.

VALUE: market second class.

SEASON: early to medium

LINDLEY. (*Rogers' 9*).

A favorite red grape for both domestic and commercial purposes. Of late, however, the vine has been somewhat disappointing in productiveness.

**LINDLEY.**

ORIGIN: Massachusetts, by E. S. Rogers; hybrid between Wild Mammoth grape of United States and Golden Chasselas.

VINE: vigorous; healthy, fairly productive.

BUNCH: medium in size; rather long; shouldered; loose.

BERRY: medium to large; color almost brick red.

FLESH: tender, separating freely from seeds; flavor sweet, rich, aromatic.

QUALITY: very good for domestic or commercial purposes.

VALUE: market first class.

SEASON: a few days in advance of Concord. Keeps easily until January.

MASSASOIT. (*Rogers' 3*).

Commended for the home garden as a fine red table grape. Needs careful spraying with Bordeaux to prevent black rot.

ORIGIN: seedling raised by E. S. Rogers, Salem, Mass.

VINE: vigorous; susceptible to attacks of black rot; self sterile.

BUNCH: medium size; shouldered; loose, fruit does not always set.

BERRY: size medium; form round; color brownish red.

FLESH: texture tender, juicy; flavor sweet, vinous.

QUALITY: dessert very good.

VALUE: not profitable for market.

SEASON: just in advance of Concord.

MERRIMAC. (*Rogers' 19*).

Considered by some the finest and most reliable black Rogers grape; in Ontario the Wilder is considered more profitable, having larger bunches.

ORIGIN: Mammoth Sage x Black Hamburg; raised by Mr. E. S. Rogers, of Salem, Massachusetts.

VINE: vigorous; healthy; self sterile and needs mixed planting.

BUNCH: medium in size; fairly compact; roundish.

BERRY: size large; color black with blue bloom.

FLESH: color greenish; texture half tender, juicy; flavor sweet, vinous.

QUALITY: dessert very good.

VALUE: market first class.

SEASON: early to medium.



MOYER.

MOYER.

For the amateur's garden this is a grape that should not be overlooked, for as a dessert grape it has now been fairly well tested, and seems to be growing in favor.

ORIGIN: Port Dalhousie, Ontario, by W. N. Read, from Delaware fertilized with Miller's Burgundy, about 1880.

VINE: fairly vigorous, healthy and not subject to mildew, hardy; not very productive.

BUNCH: small, cylindrical in form, shouldered, not very compact, not uniform in size.

BERRY: small, round; color amber with grayish bloom; skin thin, tough; pulp tender, juicy; flavor rich, sweet and excellent.

QUALITY: dessert very good, but inferior to Delaware.

VALUE: second class for market.

SEASON: very early.

MOORE. (*Moore's Early*).

A favorite with vineyardists in Ontario, because of its earliness and its good quality. As early as Champion and of very much better quality, it is superseding that variety which has done so much to prejudice buyers against our black grapes.

ORIGIN: by John B. Moore, at Concord, Mass., from Concord seed, in the year 1872.

VINE: hardy, healthy, fairly vigorous, but only moderately productive, if compared with the Concord; needs good cultivation.



MOORE.

BUNCH: smaller than Concord, and rarely shouldered.

BERRY: averaging a little larger than the Concord; round; black; thin bloom.

FLESH: vinous, juicy, with slight foxiness.

QUALITY: good.

VALUE: first class of its season

SEASON: early.

NIAGARA.

The Niagara is the leading white grape in Ontario, for commercial purposes. In health, vigor of vine and in productiveness it has no superior, and it has been planted more widely than any other variety except the Concord. For dessert purposes it is good in quality when well ripened. We do not recommend it for sections north of Toronto, unless in favored locations.



ORIGIN: raised by C. L. Hoag, of Lockport from seed of Concord, sown in 1868.

VINE: very vigorous; foliage thick and healthy, like Concord, hardy, not subject to mildew; very productive.

BUNCH: very large; often shouldered; very compact.

BERRY: round, about the size of Concord; pale green turning to pale yellow at maturity and covered with a thin whitish bloom; skin tough and not inclined to crack; pulp soft, juicy and sweet, of good flavor when fully ripe, with a touch of muskiness.

QUALITY: dessert good; canning very good.

VALUE: home markets first class.

14a F. O.

NORTHERN LIGHT.

A white grape ripening late in September: not recommended for profit.

ORIGIN: Introduced by P. E. Bucke, Ottawa, Ontario.

VINE: vigorous; healthy; moderately productive.

BUNCH: compact; shouldered.

BERRY: size medium; color white; bloom thin; flavor subacid.

QUALITY: dessert fair.

VALUE: market, hardly first class.

SEASON: late.

PERKINS.

An early market grape, healthy in vine and fruit, and a sure cropper.

ORIGIN: Massachusetts.

VINE: vigorous; hardy; productive and free from disease.

BUNCH: size medium; shouldered; compact.

BERRY: size medium; form roundish oblong; color amber with whitish bloom.

FLESH: texture pulpy, juicy, not melting; flavor sweet.

QUALITY: dessert poor; wine good.

VALUE: market second class; a poor keeper.

SEASON: early.

POCKLINGTON. (*Golden Pocklington*).

This grape was first shown at the New York State Fair, Rochester, in 1877, and was at that time considered the largest and finest white grape of purely native origin, and was largely planted for commercial purposes. However, since the introduction of the famous Niagara, the Pocklington has been almost lost sight of, and is very little planted.

ORIGIN: a seedling of Concord, raised by John Pocklington, Sandy Hill, N.Y.

VINE: of medium vigor; moderately productive; healthy, resisting mildew and rot; of *Labrusca* (Concord) parentage.

BUNCH: fairly compact, with small shoulder.

BERRY: round; color pale green, turning golden yellow; flesh pulpy, but tender and fairly juicy; flavor sweet, somewhat toxy; drops from stem after gathering.

QUALITY: dessert fair.

VALUE: home market second class; distant market third class.

SEASON: about a week later than Concord.

REQUA. (*Rogers' 28*).

A fine table grape, supposed to be too late for Canada, but ripening well in the Niagara district, a sample of the kind of grape which should be grown for export, but the vine is scarcely productive enough to be profitable.



REQUA.

ORIGIN: E. S. Rogers, Salem, Mass.; a hybrid between the Wild Labrusca, or Mammoth Fox grape, of Massachusetts, and a European variety. Mr. Rogers produced his seedlings in 1856, and at first introduced them by their numbers only.

VINE: fairly vigorous and moderately productive.

BUNCH: large, shouldered, moderately compact, but somewhat poor.

BERRY: large, round; skin thin, wine color with thick bluish bloom; pulp tender, juicy; flavor sweet, sprightly; seeds two or three, of medium size.

QUALITY: dessert very good.

VALUE: first class for home or foreign market.

SEASON: very late.

SALEM.

One of the finest flavored of Rogers' hybrids; worthy of a place in the home garden

ORIGIN: a hybrid between a native, the Wild Mammoth, fertilized by the Black Hamburg; raised by E. S. Rogers, Salem, Mass.

VINE: vigorous; productive; subject to black rot; foliage large, strong.

BUNCH: medium size; compact; shouldered.

BERRY: size large; form round; color chestnut red, with blue bloom; skin thick; seeds two, large.

FLESH: texture fairly tender, free from hard pulp, juicy; flavor sweet, vinous, sprightly, aromatic.

QUALITY: dessert good.

VALUE: not profitable for Ontario fruit growers

SEASON: about with the Delaware.

TRANSPARENT.

Valuable in Ontario only as a wine grape.

ORIGIN: seedling of Taylor, by Jacob Rommell, of Missouri.

VINE: vigorous, productive, free from mildew and rot.

BUNCH: compact, shouldered.

BERRY: firm, round; color, pale greenish yellow, transparent, with thin grey bloom; skin thin; pulp tender, juicy; flavor fine and sweet.

SEASON: medium.

ADAPTATION: southern sections of the Province.

VERGENNES.

The leading grape for winter use; may be kept in a cool cellar until spring.



VERGENNES.

ORIGIN: Vergennes, Vermont; introduced about 1880.

VINE: vigorous; healthy; productive.

BUNCH: medium; slightly shouldered; rather compact.

BERRY: large; oval, persistent; color light amber to red with greyish bloom.

FLESH: color greenish; pulp tender; fairly juicy; flavor rich, pleasant, vinous.

QUALITY: dessert fair; wine good.

VALUE: market, second class in autumn, but more valuable in winter and spring.

SEASON: late, keeping all winter.

WOODRUFF. (*Woodruff's Red*).

An attractive red grape, which promises to be valuable.

ORIGIN: C. H. Woodruff, Ann Arbor, Mich., in 1874; a chance seedling thought to be a cross between Catawba and Concord.

VINE: vigorous, hardy, productive; somewhat subject to black rot.

BUNCH: good size; shouldered; compact.

BERRY: large; round; red with thin bloom; does not crack.

QUALITY: dessert good.

VALUE: market first class.

SEASON: about the same as Concord.

WYOMING. (*Wyoming Red*).

An attractive early market grape; ripens before Delaware.

ORIGIN: Wyoming Valley in Pennsylvania.

VINE: healthy; vigorous; hardy and fairly productive.

BUNCH: small; compact; attractive.

BERRY: size medium; color very bright red.

FLESH: texture tender, juicy; flavor sweet.

QUALITY: dessert fair.

VALUE: market first class.

SEASON: medium.

WILDER. (*Rogers' 4*).

Considered in many parts of Ontario the best black grape; but it is not so productive as Concord, nor as resistant of mildew.

ORIGIN: a seedling raised by E. S. Rogers, of Salem, Massachusetts, and named in honor of Marshall P. Wilder, the late president of the Massachusetts Horticultural Society.

VINE: vigorous; somewhat inclined to mildew in unfavorable seasons; but otherwise healthy; canes heavy and long, should have long pruning.



WILDER.

BUNCH: self sterile; medium size; compact, with a small shoulder.

BERRY: large; round; dark purple with slight bloom.

FLESH: texture fairly tender, juicy, somewhat pulpy; flavor rich, sweet, pleasant.

QUALITY: dessert very good.

VALUE: market first class.

SEASON: medium.

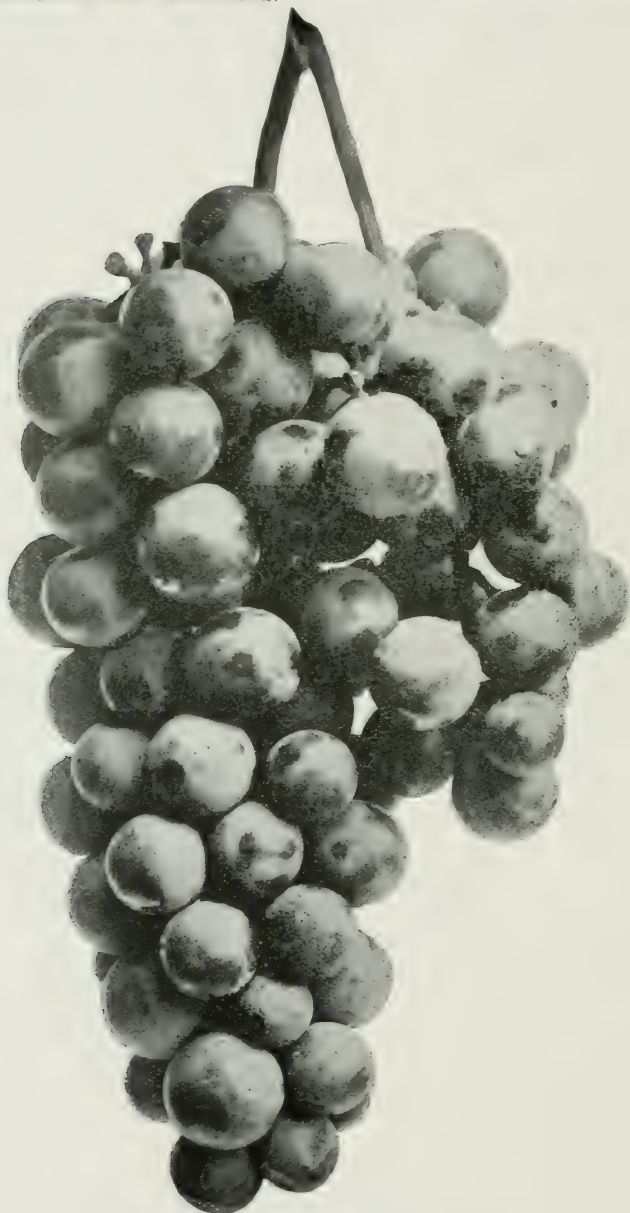
WINCHELL. (*Green Mountain*).

The best white grape of its season for the dessert table. Not much planted for market.

ORIGIN: Green Mountains of Vermont, by a Mr. Winchell, after whom it has been very properly named: but among fruit growers the name Green Mountain has the preference.

VINE: hardy, healthy, only fairly vigorous and fairly productive.

BUNCH: compact: well shouldered.



WINCHELL.

BERRY: color greenish white; size medium; skin thin; pulp tender; flavor sweet and excellent; seeds few and small.

QUALITY: dessert, good.

VALUE: market second class.

SEASON: early.

WORDEN.

The vines of the Worden are almost identical in character and appearance with its parent, the Concord.

When first introduced it was thought to be superior to that variety for the main crop, but it has proved to be so only in its earliness, ripening a few days in advance.

ORIGIN: S. Worden, Minnettoo, N. Y., from Concord seed.

VINE: strong, vigorous grower, with coarse stout foliage, dark green above, rusty underneath; very hardy, healthy and very productive



WORDEN.

BUNCH: large, compact, shouldered.

BERRY: large, black; skin tender, thin, with heavy bloom, cracks easily; flesh sweet when well ripened; pulp tender, and loses flavor soon after ripening; a poor keeper.

QUALITY: fair for dessert purposes.

VALUE: near market first class; berries too loose on stem for long shipments

SEASON: early.

ADAPTATION: well suited to the northern sections because of its early ripening.

3. Bush Fruits.

In Bush Fruits are included the Blackberry, Currant, Gooseberry, and Raspberry. These fruits, while not being of quite so much importance from a commercial standpoint as the tree fruits, are grown and consumed in very large quantities in Ontario, and as they are used in many ways by housekeepers there will always be a demand for them. They can be grown between the tree fruits to advantage while the latter are young and hence often augment the revenue of the fruit grower materially before the tree fruits come into full bearing.

Some idea of the large quantities of bush fruits which are grown will be obtained from the Dominion census statistics for 1901, where it is stated that there were at that time 8,116 acres devoted to small fruits in Ontario, on which were produced about 16,000,000 quarts valued at \$811,000.00. The strawberry is included in the above estimate. The present area devoted to small fruits is estimated at 10,000 acres.

THE BLACKBERRY.

The blackberry is not grown so largely in Ontario as it might be. It is one of the most profitable fruits to grow where it succeeds well, but as the crop is rather uncertain except in southern Ontario and in localities farther north where it is protected by a deep snow fall, its range of successful culture is somewhat limited. Where there is not danger of winter killing, a well drained clay loam is probably the best for the blackberry, as it is cooler and more retentive of moisture than lighter soils. The blackberry must have plenty of soil moisture when the fruit is ripening, otherwise but little of the crop will develop. Further north, where hardiness is of greater consideration than conservation of moisture, the poorer and warmer soils are preferred, as the blackberry on these soils does not make as rampant a growth and hence ripens its wood better.

The blackberry may be planted in late fall or early in the spring. If planted too early in the fall young growth may start which is likely to be winter killed. The soil should be well prepared and the plants set a little deeper than they were in the nursery, in rows about eight feet apart and three feet apart in the rows. Some growers prefer planting them in hills seven or eight feet apart each way, thus finding them easier to control. Larger fruit is so produced as they can be kept cultivated both ways. Summer pruning is important with the blackberry, as the lower the canes can be kept the better they are likely to come through the winter, and the easier they are to handle. Summer pruning consists in merely pinching back the young growth to within about eighteen inches of the ground, after which side shoots will be thrown out. It is better to err on the side of low pinching than to let the canes get too tall. This summer pruning may, if delayed, cause late growth which will not ripen; hence it should be done in time or not at all. In the spring the laterals should be headed back to within eighteen inches or two feet of the main canes. Old canes and the weakest of the new ones should be cut out in the fall or early in the spring each year. There will be a light crop of fruit the second year and a full crop the third year. Four or five full crops are about as much as should be taken from one plantation.

Blackberries should not be picked until they are ripe. This fruit will never increase in popularity if fruit growers persist in marketing green blackberries, as they are quite unpalatable, whereas the ripe fruit has a fine flavor.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Agawam, Snyder, Eldorado, and for southern sections, Kittatinny.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Burlington District: By A. W. Peart, Burlington, Ont.

Commercial and Domestic: Snyder, Briton, Triumph, Agawam, Taylor.

Lake Simcoe District: By G. C. Caston, Craighurst, Ont.

Commercial and Domestic: Agawam, Eldorado.

DESCRIPTION OF VARIETIES.

AGAWAM.

A profitable variety, and a favorite for the table.

ORIGIN: found growing wild by John Perkins, Ipswich, Mass., about 1870.

PLANT: hardy, vigorous and productive, resistive of drouth.

BERRY: oblong, medium size, black, sweet, tender and of good flavor.

SEASON: early.

ADAPTATION: succeeds in nearly all fruit sections; one of the hardiest varieties. and therefore planted in Northern sections in preference to Kittatinny.



AGAWAM.

BRITON. (*Ancient Briton*).

Counted one of the best varieties where it succeeds; it is a special favorite with fruit growers in Wisconsin, in which State it originated.

ORIGIN: a Wisconsin seedling found by A. H. Briton; first mentioned in the Report of the Wisconsin Horticultural Society, 1869.

PLANT: hardy, vigorous and fairly productive. Budd in his "Systematic Pomology," speaks of it as one of the hardiest varieties yet tested.



BRITON.

BERRY: medium to large; form oblong, conical; texture, melting; flavor **very** pleasant.

SEASON: medium.

ELDORADO.

A hardy and productive variety.

ORIGIN: accidental seedling near Preble, Ohio, about 1882

BUSH: a strong, vigorous grower; healthy; hardy; moderately productive.



ELDORADO.

BERRY: medium to large; oblong, conical, irregular; drupes large; seeds and core small; flavor sprightly, pleasant.

QUALITY: table very good.

VALUE: market first class.

SEASON: early.

ERIE.

A variety much like the old Lawton; has not become popular in the commercial plantations of Ontario.

ORIGIN: Ohio, on the farm of L. B. Pierce, who thinks it is a cross between Lawton and Kittatinny; introduced by J. T. Lovett in 1886.

BUSH: fairly vigorous; fairly hardy; productive.

BERRY: form roundish, oblong; size, medium; color black; flavor fairly good.

QUALITY: cooking good.

VALUE: market second class.

SEASON: medium.

KITTATINNY.

This has been the favorite blackberry in Ontario for both home use and market. Unfortunately, it is subject to Orange Rust, for which as yet there is no certain remedy, and in some places fruit growers have given up this variety on account of it.

ORIGIN: Kittatinny Mountains, N. J.; found growing wild by a Mr. Woolverton in 1874, but not much disseminated until many years later.

PLANT: very vigorous, but tender outside of the peach belt; productive; propagated by suckers and by root cuttings.



BERRY: large, oblong, slightly conical; shiny black when ripe, becoming gradually duller after gathering; flesh moderately firm, sweet, rich and excellent.

QUALITY: good for dessert; very good for cooking.

VALUE: first class for home market.

SEASON: medium to late.

LAWTON.

A variety that has done much to popularize the blackberry as a market fruit, but now supplanted by other and better kinds. In some markets all varieties of blackberries go under the name of Lawton.

ORIGIN: introduced by Wm. Lawton, of New Rochelle, N. Y., in 1848.

BUSH: vigorous; hardy; productive; canes very spiny.

BERRY: large; oblong; color jet black when fully ripe, but if gathered sooner it is reddish; texture soft and juicy at full maturity, otherwise it has a hard core, and is sour and insipid; flavor sweet and excellent when quite ripe, but in this condition rather soft for shipment.

QUALITY: cooking good.

VALUE: market second class.

SEASON: medium.

MINNEWASKI.

Introduced with great flourish, but it has proved disappointing, except in the place of origin, because tender and unproductive.

ORIGIN: by A. J. Caywood, of Marlboro, N. Y.

PLANT: a stout, vigorous, upright grower, but unproductive and tender.

BERRY: large, oblong, dull in color, and of fair quality.

SEASON: medium.

OHMER.

An excellent late blackberry, for home use and for market.

ORIGIN: a chance seedling found by N. Ohmer, of Ohio.

BUSH: vigorous; spreading; very productive.

FRUIT: roundish; black; large; firm without core; juicy; flavor mild, pleasant.

QUALITY: second rate.

VALUE: market first class.

SEASON: medium.



SNYDER.

A popular variety in the commercial fruit garden, because of its productiveness; very reliable in the colder sections, but not desirable for the table because of its inferior quality.

ORIGIN: on farm of Henry Snyder, near Laporte, Indiana, about the year 1851.

PLANT: a vigorous, stout, upright grower, hardy and very productive.

BERRY: medium size, roundish, firm and carries well.

SEASON: medium.

SNYDER.

TAYLOR. (*Taylor's Prolific*).

A valuable commercial berry for colder sections, its season being later than Snyder.
 ORIGIN: introduced by Mr. Taylor, of Spiceland, Indiana, about the year 1867.
 BUSH: hardy, vigorous and productive.



TAYLOR.

BERRY: large; roundish oblong; texture soft, juicy; flavor rich, moderately sweet.
 SEASON: medium to late.

TRIUMPH. (*Western Triumph*).

A good market berry, if grown on favorable soil.

ORIGIN: a chance seedling, found in Illinois, on the prairie, in 1858.

BUSH: moderately vigorous; very productive, inclined to overbear; requires moist bottom and close pruning for best results; semi-hardy.

BERRY: size medium; form roundish oblong; drupelets coarse; flavor sprightly, rich and sweet, without core.

QUALITY: fair.

VALUE: market first class

SEASON: medium to late.

WACHUSETT.

This blackberry was first introduced as Wachusett's Thornless, on account of its comparative freedom from spines. This, however, is the chief point in its favor, as the plant is not productive enough to be of value to the Ontario fruit grower.

ORIGIN: a wild plant on Monadnock Mountain, Massachusetts.

BUSH: a slow grower, at first upright, afterward drooping; healthy, not very productive; spines few; fruit clusters few.

BERRY: size medium; form roundish, moderately firm, of good quality.
 of good quality.

VALUE: market second class.

SEASON: early to medium.

THE CURRANT.

The currant is a very hardy fruit and for this reason can be grown with success all over the Province of Ontario, and as fair results are obtained without high culture, almost everyone who has a garden grows currants. Like all other fruits, however, the currant becomes most profitable when it is given good care.

The currant is a moisture loving fruit, hence for profit it should be planted in a cool, moist, but well drained soil. It also requires rich soil, hence as a rule the best is a good clay loam which is retentive of moisture and cooler than sandy loam. The soil should be thoroughly prepared for currants before planting. One year old plants from cuttings if strong will give good satisfaction, although two year old plants are not too old. They should be planted in rows about six feet apart, and from four to five feet apart in the rows, the wide distance being more satisfactory for the strong growing varieties and especially black currants. Fall planting is best for currants, as the buds start very early in the spring and should these develop before they can be planted, their future growth will be checked. Then can, however, be planted in the spring with success. The plants should be set a little deeper than they were in the nursery, and the soil well pressed against the roots. Thorough cultivation should follow to promote as much growth as possible, but it should be shallow, as the currant roots are near the surface. The following spring the currants will need some pruning to give them a shapely open head, the bush when well shaped having from five to seven main branches well distributed to avoid crowding. The fruit of red currants is formed from spurs on wood two years old, while the fruit of black currants is borne on wood of the previous year. Currants should be pruned annually to get the best results.

After the bushes are in full bearing, the pruning should be done with the object of removing some of the young and some of the older wood from the ground each year. There should be no wood more than three years old left on black currant bushes, as the object is to keep up a strong growth of young wood. It is also not well to let the wood of red currants get very old, as the finest fruit is produced on the two and three year old wood.

The currant plantation will begin to give some fruit the third season, but a full crop will not be obtained until the fourth.

As the currant is a great feeder, drawing heavily on the fertility of the soil, the plantation should receive an annual dressing of barnyard manure or some other fertilizer. Rotten manure applied in the autumn and cultivated in the next spring gives very good results. Applications of wood ashes or muriate of potash and ground bones are also beneficial.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Black: Black Victoria, Champion, Lee, Naples, Saunders.

Red: Cherry, Fay, Pomona, Red Cross, Victoria, Wilder.

White: White Grape.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS.

Burlington District: By A. W. Peart, Burlington, Ont.

Commercial: *Black:* Lee, Naples, Saunders.

Red: Cherry, Fay, North Star, Prince Albert, Victoria, Wilder.

White: White Grape.

Lake Huron District: By A. E. Sherrington, Walkerton, Ont.

Black: Champion, Naples, Saunders.

Red: Pomona, Red Cross.

DESCRIPTION OF VARIETIES.

BLACK VICTORIA.



BLACK VICTORIA.

BUSH: upright, of medium vigor, healthy, hardy and productive.

BERRY: large, black, firm, sweet.

QUALITY: fine.

SEASON: medium.

BRAYLEY.

BUSH: upright, spreading, vigorous, healthy, hardy; not very productive.

BUNCH: long, straggling, loose.

BERRY: dark red in color; size medium; flavor acid, sprightly.

SEASON: medium.

CHERRY. (*Red Imperial*, *Fertile d'Angers* of *Le Roy*).

The principal red currant grown in Southern Ontario for commercial purposes. Its large size, fine color and earliness, combine to make it the most satisfactory of all varieties for market, and many acres have been set out for this purpose. When well cultivated and well pruned back, a plantation of Cherry currants will continue very productive for at least twelve or fifteen years.

ORIGIN: Italy; introduced into the United States in 1846.

PLANT: vigorous, a stout stocky grower; very productive; begins bearing the second year after planting; foliage thick, dark green.

BUNCH: usually short, but sometimes long and tapering, compact.

BERRY: very large, globular; bright red in color; flavor subacid; texture firm.

QUALITY: fair

VALUE: first class for market and for jellies.

SEASON: medium to late.

ADAPTATION: general, but succeeds better on clay loam than upon light sand.

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CHERRY.

CHATAUQUA.

ORIGIN: New York State.

PLANT: vigorous; very productive.

BUNCH: long; compact.

FRUIT: deep, bright red; about size of the Cherry currant; flavor acid.

QUALITY: good.

VALUE: market first class.

SEASON: medium.

CRANDALL.

This interesting currant is of very doubtful value for the currant plantation, for canning. It is of the *Ribes aureum* type, or flowering currant, and was produced from seed of that variety by Mr. Crandall.

ORIGIN: Kansas.

BUSH: upright, spreading, hardy, healthy, vigorous, rampant and moderately productive.

BUNCH: short, compact.

BERRY: variable in size; bluish black; skin thick; flavor sprightly, sub-acid.

SEASON: medium to late; ripens unevenly, some of the later berries hanging until frost.



FAY.

FAY. (*Fay's Prototype*).

A variety that has been much advertised as superior to the Cherry, but, as a matter of fact, is very similar in fruit and in productiveness.

ORIGIN: New York State.

BUSH: vigorous, but sprawling and somewhat subject to the borer where the shoots are not frequently renewed; productive.

BUNCH: moderately close, loose toward the base.

BERRY: very large, globular; bright red; firm; flavor subacid.

QUALITY: good.

VALUE: first class for market.

SEASON: medium to late.

HOLLAND. (*White Holland, Long Bunched Holland*).

The best bunched and the most showy of the white currants.

BUSH: vigorous, healthy and quite productive.

BUNCH: loose at base of racemes, close toward apex.

BERRY: globular; skin thick, white; flavor mild acid.

SEASON: medium.

LEE.

LEE.

A good commercial variety.

ORIGIN: England.

BUSH: moderately vigorous, healthy, hardy and moderately productive.

BERRY: black, very large; flavor sub-acid; quality, very good.

SEASON: medium.

LONDON. (*London Market*).

One of the most promising of the new varieties for all purposes.

ORIGIN: England.

BUSH: very vigorous, healthy, very productive.

BUNCH: comparatively compact.

BERRY: color red; quality fair.

VALUE: very good for both kitchen and market.

SEASON: medium.

MIDDLESEX. (*Saunders' 12*).

ORIGIN: with Dr. Saunders, Ottawa, Canada.

BUSH: very vigorous, healthy, very productive.

BUNCH: compact.

BERRY: round; skin jet black, thick; flavor good.

VALUE: first class for cooking and market.

SEASON: medium.

NAPLES.

One of the best market varieties of black currants.

ORIGIN: Europe.

BUSH: upright, strong, vigorous, hardy, healthy and very productive.

BERRY: large, black, sub-acid.

QUALITY: good.

SEASON: medium to late.



NAPLES.

NORTH STAR.



NORTH STAR.

ORIGIN: Minnesota.

BUSH: vigorous, healthy, moderately productive.

BUNCH: compact.

BERRY: round; skin thin, bright red; sub-acid.

QUALITY: cooking very good.

VALUE: second class on account of size, but, season and productiveness considered, it might be rated first class.

SEASON: medium to late.

PRINCE ALBERT.

One of the most profitable red currants: excellent for canning.



PRINCE ALBERT.

RED CROSS.

Very much resembles Cherry, but somewhat poorer in bunch.

ORIGIN: New York State, probably a cross between the Cherry and the White Grape.

BUSH: upright; vigorous; hardy; fairly productive.

BUNCH: compact.

BERRY: round; color bright red; flavor fairly good, agreeably acid.

SEASON: medium

BUSH: a poor grower while young, but as it grows older quite vigorous and productive. Beach, of Geneva, N. Y., in a three years' test found this the most productive currant in his collection, yielding, during that period, an average of about nine pounds per bush; leaves large and deeply cut.

BUNCH: short to medium length.

BERRY: size medium; color light red; flavor very acid.

QUALITY: first class for cooking or jelly.

VALUE: market first class.

SEASON: late.



RED CROSS.

RED DUTCH.

Too small for the commercial plantation: fine flavor for dessert.

ORIGIN: Europe.

BUSH: dwarfish, slender; hardy; very productive.

BUNCH: medium; loose.

BERRY: small, oblate, sprightly, sub-acid, pleasant.

VALUE: second class for market.

SEASON: medium.

ST. GILES. (*Belle de St. Giles*.)

This is a large berry of fine quality, but not productive enough for the commercial plantation.

ORIGIN: Europe.

BUSH: upright, spreading; vigor medium; hardy, not very productive.

BUNCH: large and compact.

BERRY: red, large, subacid.

QUALITY: excellent.

SEASON: medium.

SAUNDERS.

A very promising black currant.

ORIGIN: London, Ontario, by Dr. Wm. Saunders.

BUSH: vigorous; hardy; healthy; productive.



SAUNDERS.

BERRY: large; black; flavor sweetish or subacid.

QUALITY: very good.

VALUE: market first class.

SEASON: medium.

VICTORIA.

A good commercial variety.

ORIGIN: England.

BUSH: very vigorous; hardy; very productive.

BUNCH: long, loose.

BERRY: medium; color red; firm; flavor acid.

VALUE: market first class.

SEASON: medium.



VICTORIA.



VERSAILLAISE.

VERSAILLAISE.

This variety closely resembles Cherry.

ORIGIN: France.

BUSH: healthy, hardy, fairly vigorous and fairly productive.

BUNCH: medium and moderately compact.

BERRY: round; bright red; flavor milder than that of the Cherry.

VALUE: market first class.

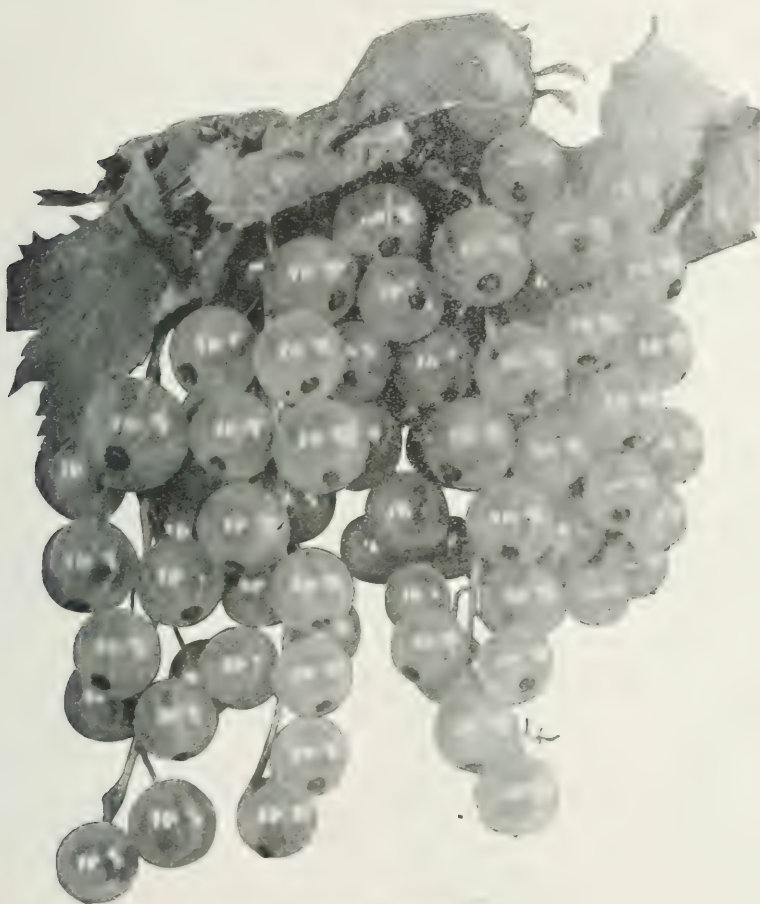
SEASON: medium to late.

WHITE GRAPE. (*White Antwerp; White Transparent*).

This is esteemed the finest of all the white currants, when its many good points are taken into consideration, viz., quality, beauty and productiveness. For market, its white color is against it, but for the home garden it is one of the best.

ORIGIN: Europe.

BUSH: moderately vigorous; hardy; very productive.



WHITE GRAPE.

BUNCH: somewhat straggling.

BERRY: skin white, transparent; flavor mild acid, sprightly, agreeable.

QUALITY: best for dessert.

VALUE: best class for market

SEASON: medium.

WHITE IMPERIAL.

BUSH: vigorous hardy, healthy and fairly productive

BUNCH: loose, with half an inch of stem.

BERRY: white; flavor mild; quality fine.

QUALITY: dessert very good.

SEASON: medium.



WILDER.

This is one of the best of the red currants and has given an excellent record at our Burlington station. It is highly recommended in a recent report of the American Pomological Society.

ORIGIN: New York State, named in honor of the late Marshall P. Wilder.

BUSH: healthy, hardy and very productive.

BUNCH: compact.

BERRY: dull red; form uneven; mild in flavor; of good quality.

VALUE: first class for market.

SEASON: medium.

WILDER

THE GOOSEBERRY.

The gooseberry and the currant are the two hardiest bush fruits which are cultivated, and the gooseberry, like the currant, succeeds in all parts of the Province, although the hardy gooseberries are confined to the varieties derived from the native species and to crosses between the native and the European. The European varieties are only grown successfully in favored locations as in most places they are very subject to mildew.

The gooseberry, like the currant, requires a cool, moist, though well drained soil to give the best results, and suffers more than almost any other fruit in a dry time. These cool, moist conditions are best obtained as a rule by planting in a well drained friable clay loam. The soil should be thoroughly prepared, as although the gooseberry will give a fine crop of fruit, even if not well cared for, the size will be small. Gooseberries may be planted with success either in spring or fall, but fall planting is preferable, as growth begins early and plants usually receive a severe check if planted in the spring.

A good distance for planting is six by four or five feet. As gooseberries and currants are usually planted together, it is best to give them both the same distance so that cultivation will be easier. The soil should be well cultivated every year to retain moisture. As the gooseberry makes much more wood each year than is needed, annual pruning is necessary.

The pruning should be begun before growth starts the second year, and with the object of obtaining an open bush having four or five main fruiting branches well distributed. The annual pruning should consist of removing most of the young branches, leaving a few of the best to take the place of some of the older ones later on and removing enough of the laterals to open up the head.

The gooseberry produces its fruit on spurs on wood two or more years old, hence there should always be a fair amount of this wood. Wood more than three years old should be removed to give place to that which is younger and which will bear better fruit.

The soil should be well fertilized and treated in this respect much like the currant.

The bushes will bear some fruit in the third season and should have a full crop in the fourth.

Although in England and Europe ripe gooseberries are highly esteemed, few of them are eaten raw in Ontario, hence this fruit is usually picked green and used for sauce, canning and pies. Being firm, it ships well and is usually a profitable crop.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Pearl, Downing, Red Jacket, Whitesmith is one of the best English varieties, but is almost valueless on some soils and in some localities owing to mildew.

DESCRIPTION OF VARIETIES.

CHAMPION.

A valuable variety for market in green condition.

ORIGIN: at Salem, Oregon.

PLANT: very vigorous; of easy cultivation; fairly productive.

BERRY: size about equal to that of Downing; form round oval; skin greenish yellow, thin, tender; flavor fair.

QUALITY: fair.

VALUE: market second class.

SEASON: early.

CROWN BOB.

A profitable gooseberry.

BUSH: inclined to overbear, and thus exhaust its vitality; drooping in habit.

BERRY: oblong, very large, especially if thinned before it is full grown; skin thin, hairy; color red; of very good flavor, but being an English variety is subject to mildew.

SEASON: early.

DOWNING.

This has been the most popular gooseberry of American origin for some years, unless we except the Pearl, a variety of Canadian origin, very similar in size and appearance. It is very widely known and planted all over the continent of North America. It is not subject to mildew, and succeeds splendidly everywhere.

ORIGIN: by Chas. Downing, Newburgh, N. Y.; a seedling of Houghton.

PLANT: first rate in health and vigor and productiveness; an upright grower.

FRUIT: size medium; form round, often somewhat narrowed toward apex; skin smooth, transparent green with distinct light green ribs, and a thin whitish bloom.

FLESH: light green; tender; sweet and good.

VALUE: for market first class.

SEASON: medium.



DOWNING. (slightly reduced).

KEEPSAKE.

A very good commercial gooseberry, which succeeds in many parts of Ontario.

ORIGIN: England.

BUSH: vigorous; productive; very little subject to mildew.

BERRY: medium to large; form nearly round; color greenish white; skin smooth; flavor sweetish.

QUALITY: very good.

VALUE: market first class.

PEARL.

The Pearl gooseberry has been widely planted in the commercial gardens of Canada and the United States. It is certainly a magnificent cropper, but it is very difficult indeed to distinguish the berry from the Downing, except that it averages a trifle larger.

ORIGIN: London, Ontario, by Mr. Saunders; a cross between Houghton and Red Warrington.

PLANT: healthy, not subject to mildew; upright, spreading; first rate in vigor and in productiveness.

FRUIT: medium, round, often narrowing toward apex; skin smooth, transparent green, with thin whitish bloom and light green ribs.

FLESH: light green, tender, sweet and good.

VALUE: market very much the same as Downing.

SEASON: medium.



PEARL.

RED JACKET. (*Joselyn*).

One of the best gooseberries for the Ontario fruit grower, either for home use or for market.



RED JACKET.

ORIGIN: at London, Ont., by Dr. Wm. Saunders.

PLANT: an excellent grower; free from mildew; almost equal to Pearl in productiveness.

BERRY: form round oval; color reddish green, shading into red; skin smooth and transparent, rather tender; texture juicy; flavor rich.

QUALITY: cooking very good.

VALUE: market first class.

SEASON: medium.

WHITESMITH.

One of the best of the English varieties for cultivation in Ontario; succeeds on clay land, with northern aspect. On the sandy soil of the Niagara district it is much affected by mildew.

ORIGIN: England.

PLANT: upright, fairly productive, fairly vigorous.

FRUIT: large, oval, downy, with distinct regular veins green, and when ripe sweet and agreeable.

QUALITY: very good for home uses.

VALUE: first class for market.

SEASON: early.

THE RASPBERRY.

Next to the strawberry, the raspberry is the most popular bush fruit grown in Ontario, and as it follows the former in season the consumer is well supplied with these two fruits most of the summer. The raspberry being a native of Ontario, is hardy in almost all parts of the Province, hence it is cultivated over a very wide area.

Like the other bush fruits, the raspberry does best when grown in a cool, moist, but well drained soil. While this soil should be of good quality, if it is very rich in nitrogen the growth may be too rank and in some localities the canes on this account are more liable to winter injury. The best success is usually obtained with a good clay loam, although the raspberry will do fairly well in most kinds of soil. The preparation of the land should be the same as for other bush fruits. The plants may be set either in fall or spring, although if young growing suckers are used they may be planted successfully any time in the early part of the summer where the soil is moist. Red raspberries are usually planted in rows six feet apart with the plants three feet apart in the rows, although they may be cultivated longer and better if grown in hills about five feet each way, and for the amateur this is the best way to grow them. The cultivation of the raspberry should be thorough to retain moisture, as in the fruiting season a good supply of moisture is very important. Some growers prefer pinching back the canes in summer when they are from eighteen inches to two feet in height, believing that they get a better crop by so doing, but this system is not recommended as it has been found by experiments that red raspberries succeed better when the growth is not headed back in summer. Sometimes, also, the pinching is delayed and the laterals which are made do not ripen thoroughly and the canes are injured by winter. It is best to let the canes make full growth in summer and if they are very tall they may be headed back to three or four feet in height before growth begins in the spring. Black raspberries are planted most successfully in the spring. They should be set rather shallow, as if planted deep they will not grow. Stockier plants will be obtained if the plants are set in a furrow and lightly covered with soil, applying more soil as the plants grow until the field is level. Pinching back in summer is a good practice with black raspberries, as it makes the plants stockier and better able to withstand storms. The thinning out of the canes may be done in fall or spring. Seven or eight of the strong canes of red raspberries to a hill and three or four of black raspberries are sufficient to leave. If the raspberries are grown in a hedge row the weakest canes should be removed, leaving those which are to fruit about six inches apart. The raspberry plantation should be kept well supplied with plant food, but a too liberal use of nitrogenous fertilizers, as previously stated, should be avoided.

In the colder parts of the country it is a very good practice to bend the canes down in the fall for better protection in winter, the canes being held in place by covering the tips with soil. By adopting this plan serious winter injury rarely occurs.

VARIETIES RECOMMENDED.

GENERAL LIST, APPROVED BY THE BOARD OF CONTROL.

Black: Hilborn, Older, Gregg, Smith Giant.

Purple: Columbian, Shaffer.

Red: Marlboro, Herbert, Cuthbert.

White: Golden Queen.

DISTRICT LISTS, RECOMMENDED BY THE EXPERIMENTERS

Lake Huron District: By A. E. Sherrington, Walkerton, Ont.

Commercial and Domestic:

Black: Hilborn, Conrath, Older.

Purple: Columbian, Shaffer.

Red: Marlboro, Herbert, Cuthbert

DESCRIPTION OF VARIETIES.

CAROLINE.

A very productive variety, but of little use for market because too soft for shipping, and not in favor for home use because of its ordinary quality.

ORIGIN: at New Rochelle, N. Y., by S. P. Carpenter; supposed seedling of Brinckle's Orange.

FRUIT: medium size; form round; color pinkish yellow; seeds small, close, easily parted from each other and from stalk; flesh juicy, sweet, lacking in flavor.

QUALITY: only fair for all purposes.

VALUE: second class for market.

SEASON: early.

CONRATH.

One of the best blackcaps for profit.



ORIGIN: Michigan, in 1886; a chance seedling near Ann Arbor; introduced by Conrath Bros.

BUSH: vigorous, healthy, productive, resistant to drouth.

BERRY: large; firm; black.

QUALITY: good for either cooking or dessert.

VALUE: for market very good.

SEASON: early.

ADAPTATION: succeeds well at our Lake Huron station. Highly recommended in Catalogue of American Pomological Society for Ontario, Michigan and New York.

CONRATH (slightly reduced).

COLUMBIAN.

Valuable for cooking, canning and table use; but not popular in color as a market berry.

ORIGIN: a supposed seedling of Cuthbert, crossed with Gregg, at Oneida, N. Y.

PLANT: a strong, vigorous grower; very productive.

BERRY: size large; color purple; texture fairly firm, moderately juicy; flavor nearly sweet.

QUALITY: very good for cooking; fair for dessert.

VALUE: market second class.

SEASON: medium.

CUTHBERT. (*Queen of the Market*).

Previous to the introduction of the Cuthbert, many varieties of raspberries were grown for profit, such as Turner, Philadelphia, Highland Hardy, etc., but these have given place entirely and are heard of no longer. So prolific has this variety proved itself that acres have been planted by fruit growers throughout Ontario, and immense quantities of its fine fruit sent into our best markets. A favorite for canning factories.



CUTHBERT.

ORIGIN: chance seedling in the garden of Thomas Cuthbert, Riverdale, N. Y.

PLANT: vigorous, canes strong, often six feet high or more on rich sandy loam not too dry; sometimes branching; very productive; spines short, stout, numerous; suckers almost too freely and young growth needs to be kept within bounds.

FRUIT: large; color bright crimson; form conical, obtuse at apex; seeds small, compact, part easily from stalk when very ripe; flesh firm, fairly juicy, sweet, agreeable.

SEASON: medium.

QUALITY: very good for cooking; good for dessert.

VALUE: first class for market.

CUMBERLAND.

A promising black cap.

ORIGIN: by David Miller, Camp Hill, Pennsylvania, in 1896.

PLANT: vigorous; productive.

BERRY: size very large; form oval; color black; texture firm; flavor very pleasant.

QUALITY: dessert or cooking very good.

VALUE: market first class.

SEASON: early.

GOLDEN QUEEN.

A good yellow variety: not grown for market, the red colored varieties being more in demand.



GOLDEN QUEEN.

ORIGIN: New Jersey; a sport of the Cuthbert; 1883.

BUSH: vigorous; very productive; hardy.

BERRY: medium to large; roundish conical; color rich golden yellow; similar to Cuthbert except in color.

FLESH: tender; juicy; sweet.

QUALITY: dessert good; cooking good.

VALUE: market second class.

SEASON: medium.

GREGG.

One of the best late blackcaps for market purposes; an excellent shipper and also much valued for evaporating.

ORIGIN: on the Gregg farm, Ohio County, Indiana, in 1866.

PLANT: vigorous; fairly hardy; canes upright, clean and smooth, rather difficult of propagation; very productive.

BERRY: size large; color black with grey bloom; texture firm, moderately juicy; flavor sweet.

SEASON: late.



GREGG.

HERBERT.

A valuable red raspberry for the commercial plantation; combining the good qualities, hardiness, productiveness and earliness.

ORIGIN: a chance seedling in the garden of Mr. R. B. Whyte, Ottawa, about the year 1890; introduced by the Renfrew Nursery Company.

BUSH: hardy, enduring the cold winters at Ottawa with a temperature of 30 below zero; vigorous; about equal to Cuthbert; productive.

BERRY: large; color bright red; form, somewhat oblong; texture a little tender, juicy; flavor sweet and excellent.

QUALITY: very good for all purposes.

VALUE: market, first class.

SEASON: earlier than Cuthbert.



HERBERT.

HILBORN.

A favorite blackcap for market in some localities.



HILBORN.

ORIGIN: a chance seedling, introduced by W. W. Hilborn, of Leamington, Ontario, in 1886.

BUSH: hardy; vigorous; productive.

FRUIT: medium to large, about the size of Gregg; color black; texture firm, juicy; flavor rich and good.

QUALITY: first class for dessert or cooking.

VALUE: market first class.

SEASON: early.

KANSAS.

One of the newer blackcaps.

ORIGIN: chance seedling in Kansas, U. S., about 1884.

BUSH: vigorous; very thorny; propagation easy; tender in Lake Huron District.

BERRY: large; roundish; color shining black.

FLESH: firm; moderately juicy; flavor mild, pleasant.

QUALITY: very good for canning, pies, etc.

VALUE: market first class.

SEASON: medium.

LOUDON.

A good market variety, the berries being a little larger than Cuthbert, but not quite equal to it in quality.

ORIGIN: raised by F. W. Loudon, of Wisconsin, from seed of Turner crossed with Cuthbert.

PLANT: hardy; very productive; but not very vigorous; canes very slightly branched, and have strong buds which produce the fruiting branches: pinching back the tips is therefore not wise.

BERRY: size large; form conical; color red, attractive; grains large, inclined to crumble; texture firm; flavor fair.

QUALITY: dessert or cooking fair.

VALUE: first class for market.

SEASON: medium.

MARLBORO.

This raspberry has been coming gradually to the front ever since its introduction about the year 1880. The old Highland Hardy for a while disputed its place as an early market berry, but the superior size and beauty of the former soon caused the latter to give place entirely, until Marlboro and Cuthbert have been for many years the two leading varieties of red raspberries to cover the season.



MARLBORO.

PLANT: fairly vigorous; canes short, stout, upright, without branches: propagated by suckers; fairly productive.

BERRY: round; color light red; seeds close and firm; flavor mild, pleasant; texture rather seedy.

QUALITY: fairly good.

VALUE: market first class.

SEASON: early.

MILLER.

A promising berry for near markets.

ORIGIN: found near Wilmington, Delaware.

PLANT: strong; vigorous; hardy; productive.

BERRY: medium; color bright red; texture tender; flavor sweet, pleasant.

QUALITY: very good.

SEASON: early.

OLDER.

A popular blackcap in Iowa; counted a failure in Michigan; reported upon favorably at our Lake Huron station.



OLDER.

ORIGIN: a chance seedling in the garden of Mr. Older, of Independence, Iowa, in 1872.

PLANT: vigorous; hardy at Ottawa, Guelph and Walkerton; canes of a trailing nature and need cutting back; endures drouth well; very productive.

BERRY: large; color jet black without bloom; texture juicy and moderately firm; flavor pleasant.

QUALITY: good.

SEASON: early to medium.

PHOENIX.

Considered a profitable market variety for some growers, but by others reported as only moderately productive.

ORIGIN: United States.

BUSH: fairly vigorous; hardy; not very productive.

BERRY: large; red.

QUALITY: very good.

SEASON: medium.

RELIANCE.

A fairly good early table berry; rather soft for shipment; resembles Turner.

ORIGIN: New Jersey; a seedling of the Philadelphia raspberry.

BUSH: healthy; canes strong and vigorous; very productive.

BERRY: size medium; color dark red; texture inclined to be soft and juicy; flavor sweetish, ordinary.

QUALITY: dessert and cooking fair.

VALUE: first class for near market; second class for shipping

SEASON: early.

SHAFFER.

On its first introduction the Shaffer created much enthusiasm by reason of its thrift, productiveness and good quality. It is still considerably grown for canning purposes, but its color is not a favorite one in the market.



SHAFFER.

ORIGIN: on farm of Mr. Shaffer, Wheatland, N. Y., in 1869; introduced by Chas. Green, Rochester, in 1881.

PLANT: very vigorous; canes grow six or seven feet high, if not pinched back; very productive; propagates from tips.

FRUIT: large; color purple; form roundish; grains large, loose, easily separated from stalk; flesh very juicy and tender; flavor sweet, rich and very agreeable.

QUALITY: very good for cooking; good for dessert.

VALUE: second class for market.

SEASON: medium.

SMITH GIANT.

A very promising black raspberry for the commercial plantation.

ORIGIN: with A. M. Smith, St. Catharines, Ont.

PLANT: vigorous, fairly hardy and quite productive.

FRUIT: very large; black, with heavy bloom.



SMITH GIANT.

QUALITY: dessert or cooking very good.

VALUE: market one of the best.

SEASON: late.

TURNER.

A fine table berry, and valuable for the home garden; a good market berry, but rather soft for distant shipment.

ORIGIN: by J. B. Turner, Jacksonville, Illinois.

PLANT: very hardy; fairly vigorous, making a good strong cane; productive.

BERRY: form roundish conical; size medium; color dark red; texture soft; flavor sweet, excellent.

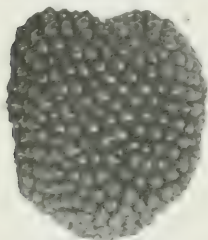
QUALITY: dessert or cooking very good.

VALUE: home market first class; distant market second class.

SEASON: medium.

STRAWBERRY-RASPBERRY.

Considered somewhat valuable for canning, presenting an attractive appearance in the jar; interesting as a curiosity, but of no commercial value; may become a troublesome weed.



PLANT: easily propagated by suckers and rootstocks; scantily productive; stalks grow eighteen inches high and die down in the fall; fruits on growth of the current season.

BERRY: large; color a beautiful bright red; quality poor, but somewhat improved by cooking.

VALUE: market third class.

SEASON: July to September.

STRAWBERRY-RASPBERRY.

4. The Strawberry.

The strawberry is the most popular fruit cultivated in Ontario. This is doubtless due in part to the intrinsic value of the strawberry itself, which is one of the most delicious of fruits, but it is believed that the popularity of the strawberry comes largely from the fact that it can be grown by almost every one, as, unlike most fruits, very little land is required to produce sufficient for home consumption.

Strawberries can be grown in all parts of Ontario where the soil is suitable, hence large quantities are produced and consumed annually, and owing to the difference in the time of ripening between the southern and northern parts of the Province, the season is lengthened very much, and furthermore, the strawberries of one district do not come in such close competition with those from another as they would do if all ripened at the same time.

Strawberries will succeed on almost any rich well drained soil, but the largest crops are, it is believed, produced on a friable clay loam which is retentive of moisture. It is important, however, to avoid planting strawberries where water is likely to lie at any time, as surface water is very injurious to strawberries, and if water freezes over strawberries in winter they are almost sure to be killed.

In preparing soil for this fruit, it should be made very rich. There are no records known where land was made too rich for strawberries. There is nothing so good as well rotted manure for this purpose. Fresh manure is not so good, as it usually contains many weed seeds which will germinate after the manure is applied. The manure should be thoroughly worked into the surface soil early in the spring, for if this is not well done the soil will dry out, the conservation of moisture being important in growing strawberries. Strawberries also do well after clover, which in part takes the place of manure. The best time to set out the plants is early in the spring. Fall planting is not recommended, as although there is fair success in wet seasons, in a dry year the plants usually suffer.

When the ground has been marked off into rows about $3\frac{1}{2}$ feet apart with cross rows about 18 to 20 inches apart, the plants are set at the intersections of the rows. The usual practice with large growers is for one person to open a hole with a spade, and another, preferably a boy, to place the plant, the soil being then pressed against the plant with the foot. In smaller plantations, planting with a trowel will be found very satisfactory. The chief essentials in planting are first to have the crown of the plant a little below the surface of the soil when it is pressed down. If the crown comes above the surface of the soil the plant is almost sure to die from drying out, and if set too deep the plant is liable to rot. The second important point is to make the soil firm about the plant, thus causing the moisture to rise to the roots. Strawberry plants are almost sure to die, especially in a dry time, if this precaution is not taken. A third essential, is to spread the roots in the cleft made by the spade, as although the plants will live even if this is not done, they will start quicker and thrive better if the roots are properly spread. After the plants are set cultivation should be thorough to conserve moisture and encourage the production of young plants early in the season, as the earlier these young plants are produced and become rooted, the larger crop they are likely to bear the next season.

All flowers should be pinched off the first season, as they exhaust the strength of the plant and delay the production of runners. The most common method of growing strawberries is in the matted row. Grown in this way there should be a row of plants about two feet in width by autumn. During the summer, as

runners are made, they should be placed about six inches apart and held with a little soil so as to give the plants the best chance to develop. After a row of the required width has been formed, later plants should, if possible, be cut out by hand and with the cultivator, so that the rows will not become too crowded nor too wide. A full crop should be obtained the second season. Hill culture and narrow rows are recommended in some quarters, but while finer fruit is obtained than by the matted row system, more labor is involved.

It is advisable to cover the strawberries lightly with straw after the ground freezes, to prevent the alternate thawing and freezing of the ground in winter and early spring. This covering should be removed in the spring before growth begins.

To get the best results only one crop should be taken from a strawberry plantation. If the land is very clean and the varieties used do not run much, two crops can be removed with profit. As a rule, however, the labor involved in destroying weeds, and the deterioration in size of fruit, makes it more profitable to plough up the plantation after the first crop.

It should be thoroughly understood by those intending to plant strawberries that some varieties have imperfect flowers and will not produce fruit unless a perfect flowering sort is planted near to pollinize the imperfect flowers. One row of the perfect variety to three of an imperfect is usually sufficient. There are many new varieties of strawberries introduced every year, but few of these are better or even as good as those already on the market. However, the old kinds are constantly giving place to the new, and it is wise for the fruit grower to learn which new varieties are giving the best results. Many varieties are described in this report, but it will be found that but few are recommended.

VARIETIES RECOMMENDED.

Commercial: Splendid (Perfect), Bederwood (P.), Warfield (Imperfect), not suited to light, sandy soil, Greenville (Imp.), Williams (P.), Saunders (P.), Sample (Imp.), Irene (Imp.), Buster (Imp.).

Domestic: Van Deman (P.), Splendid (P.), Excelsior (P.), Dunlap (P.), Ruby (P.), Bubach (Imp.), Irene (Imp.), Belt (P.), Lovett (P.).

NOTE.—In selecting varieties for planting, perfect-flowered varieties should be included to fertilize those having imperfect flowers.

DESCRIPTION OF VARIETIES

ANNIE LAURIE.

This is a very late variety, also one of the best quality. It may be taken as a standard for quality and flavor.

ORIGIN: a seedling grown by John F. Beaver, of Ohio, in 1889.

PLANT: very healthy and a good grower, making plenty of runners for a fruiting row. No rust; perfect blossom; moderately productive.

FRUIT: berries are large and round, like the Jersey Queen, with gold seeds prominent. A very bright glossy scarlet, making a fine appearance.

FLESH: pinkish white, of the very finest quality; a fine table variety.

SEASON: late.

BEDERWOOD.

One of the most productive of the early varieties.

ORIGIN: with Bederwood, of Illinois.

PLANT: vigorous; inclined to rust; very productive. Stevenson ranks it "as the standard of productiveness for early varieties," blossom perfect, an excellent pollinizer.

BERRY: size small; form roundish; color light vermilion.

FLESH: texture soft; flavor sweet, ordinary.

QUALITY: dessert poor; canning fair.

VALUE: near market first class; distant second class.

SEASON: early.

BELT.

ORIGIN: this berry comes from Ohio, having been originated by Wm. Belt, of that State. It is being grown largely as a fancy berry.

PLANT: large and strong, but rusts sometimes very badly; perfect blossom; quite productive.



BELT.

FRUIT: large to very large, conical; bright scarlet in color; firm.

FLESH: pink slashed with white; nice mild flavor; best quality.

SEASON: medium to late.

BRANDYWINE.

Highly valued in some sections.

ORIGIN: seedling of Glendale x Cumberland, raised by E. Ingram of Pennsylvania; introduced in 1894.

PLANT: very vigorous; propagates almost too freely; perfect flowered; productive.

BERRY: large; form oblate conical; color crimson.

FLESH: texture firm; flavor agreeable acid.

QUALITY: dessert very good.

VALUE: market first class.

SEASON: medium to late.

BISMARCK.

A good mid-season market berry; in some respects an improvement on its parent.

ORIGIN: grown from seed of Bubach fertilized by Bubach, by I. C. Bauer, of Arkansas.

PLANT: vigorous; healthy; easily propagated; perfect flower; very productive.

BERRY: large; roundish conical; color crimson; seeds yellow.

FLESH: color pinkish; texture firm; flavor sweet.

QUALITY: dessert very good.

VALUE: market first class.

SEASON: mid-season to late.

BOYNTON.

This variety so closely resembles the old Crescent in its best days that it has been affirmed by some that it is the Crescent under a new name.

ORIGIN: said to be a cross between the Crescent and Sharpless; from Albany, N. Y.

PLANT: strong, vigorous, and healthy grower, making a wild, matted row; imperfect blossom; very productive.

FRUIT: medium in size; light scarlet in color; medium in firmness.

FLESH: pink; acid, but fair quality.

SEASON: early, medium.

BUSTER.

A valuable late variety, which seems to adapt itself well to varied conditions. In the extensive variety tests both at the Central Experimental Farm, Ottawa, and at the Ontario Agricultural College, Guelph, it has for years ranked among the most productive sorts.

ORIGIN: supposed to be seedling of Bubach, raised by Mr. Stone, of Illinois.

PLANT: extra large, with very long stout leaf stalks and healthy foliage, remarkably free of rust; propagates readily and usually makes a good wide row of plants. Blooms late and flowers are imperfect, requiring a late blooming perfect flowered variety, such as Williams, to insure fertilization. Very productive.



BUSTER.

FRUIT: very large and well formed, quite regular in shape. Like Clyde, it is rather pale in color for a first-class berry. This is its most objectionable feature. Seeds deeply pitted. Moderately firm for so large a berry; fair quality, somewhat acid.

SEASON: among the latest.

ADAPTATION: seems to adapt itself well to varied conditions and is favorably reported upon from many sources. (Hutt).

BUBACH.



BUBACH.

A standard market berry, of the largest size.
 ORIGIN: a seedling raised by J. G. Bubach of Illinois.

PLANT: healthy; vigorous; does not make many runners; imperfect blossom; only fairly productive.

BERRY: very large; conical; irregular; color scarlet; showy.

FLESH: red; agreeable and acid.

QUALITY: dessert good.

VALUE: near market first class; one of the best.

SEASON: medium.

CARRIE.

The Carrie would appear to have a bright future before it. It is one of the late sorts bidding for public favor.



CARRIE.

ORIGIN: seedling of Haverland, by Mr. Thompson, of Virginia.

PLANT: large, vigorous and healthy, making long and strong runners and plenty of them; it somewhat resembles Haverland; not so productive; imperfect blossom.

FRUIT: the fruit is not so long as Haverland; very firm; color bright scarlet, with gold seeds.

FLESH: white and solid; good flavor.

SEASON: medium.

CLYDE.

At one time a universal favorite as a commercial berry, but has not held up its early records.

ORIGIN: seedling of Cyclone about 1890, by Dr. Stayman of Kansas; the Cyclone itself being a seedling of Crescent.

PLANT: very healthy, but wilts down under a hot sun; easy of propagation; perfect flowered.

BERRY: very large; form roundish conical; color light scarlet.

FLESH: moderately firm; color pinkish white; flavor very pleasant.

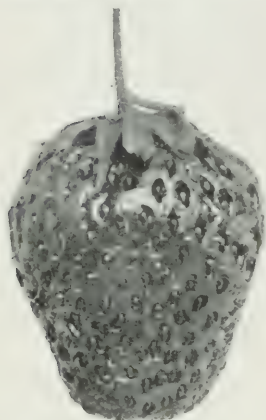
QUALITY: dessert very good; canning poor.

VALUE: second class for near market.

SEASON: early to medium.

DUNLAP. (*Senator Dunlap*).

A fine mid-season market berry, said to be better in quality and a better shipper than its parent.



DUNLAP.

ORIGIN: Ohio; a seedling of Warfield.

PLANT: small; vigorous, resistant of drouth; very productive; blossoms perfect.

BERRY: size medium to large; form long conical with short neck; color dark crimson.

FLESH: color red; texture firm.

QUALITY: very good.

VALUE: market first class.

ELEANOR.

The Eleanor is one of the extra early kind; a good healthy vigorous grower; fruit good size, fine shape; in wet seasons it has a kind of mildew like on the Michel's.

ORIGIN: New Jersey, a chance seedling found by Mr. Coombe.

PLANT: very healthy, vigorous grower, small and slender, dark in color, making many runners; perfect blossom; quite productive.

FRUIT: color dark scarlet or crimson; medium in firmness.

FLESH: red, white centre; acid, but good flavor.

SEASON: one of the earliest.

EMPEROR

ORIGIN: by John Little, Granton, Ont.

PLANT: large, vigorous, healthy; quite productive; perfect flowered.

BERRY: very large; conical, sometimes ribbed; color dark red.

FLESH: reddish pink almost to the centre; texture firm.

QUALITY: good.

SEASON: medium to late.

EMPRESS.

Very like the Emperor and from the same source, originated by the late John Little; both resemble the Woolverton in fruit. The plant is very healthy, strong, productive and a vigorous grower. The fruit is dark red and attractive, and of good quality; season, medium to late; blossom perfect.

EXCELSIOR.

Popular in some sections because very early.

ORIGIN: Arkansas.

PLANT: vigorous; propagates easily; sometimes inclined to leaf rust; fairly productive; blossom perfect.

BERRY: medium; form roundish, somewhat conical; color bright red.

FLESH: texture firm; flavor very pleasant.

QUALITY: very good.

VALUE: market second class.

SEASON: very early.

GEISLER.

ORIGIN: a chance seedling found in Michigan, somewhat resembling the Seaford in shape and size.

PLANT: a very strong plant, making plenty of runners; very healthy, no sign of rust and quite productive; perfect blossom; a very early bloomer, one of the first.

FRUIT: large, bright dark scarlet, round to oblong in shape; solid.

FLESH: light pink in color, medium in firmness and of good quality.

SEASON: early to medium.

GANDY.

One of the best very late varieties.

ORIGIN: New Jersey; seedling of Jersey Queen x Glendale

PLANT: healthy; blossoms perfect; a shy bearer.

BERRY: large; form conical, regular; color glossy crimson.

FLESH: color pink; texture firm.

QUALITY: dessert very good; canning excellent.

VALUE: market near or distant first class; an excellent shipping berry.

SEASON: very late.

GLEN MARY.

Considerably planted for market purposes on account of its size and productiveness.

ORIGIN: a chance seedling found by J. A. Ingram, of Pennsylvania.

PLANT: vigorous; healthy; foliage dark green; propagates readily; blossoms perfect; fruit stem stout; productive.

BERRY: large to very large; form round conical, ribbed, with green tip; color dark crimson.

FLESH: pink and white; texture firm; flavor slightly acid.

QUALITY: dessert fair; canning good.

VALUE: market first class; a good shipper.

SEASON: medium to late.

GREENVILLE.

A good commercial berry, which seems to succeed everywhere.



GREENVILLE.

ORIGIN: a chance seedling of Bubach found in Ohio.

PLANT: vigorous; healthy; propagation easy; blossoms imperfect; very productive.

BERRY: large but not quite as large as Bubach; form obtuse conical, approaching heart shape; color scarlet.

FLESH: pink to white; somewhat hollow; texture moderately firm; flavor pleasant.

QUALITY: very good.

VALUE: first class, especially for near market.

SEASON: medium.

HALES 11.59 P. M. (Midnight).

ORIGIN: seed from Haverland crossed with Parker-Earle; introduced by J. H. Hale, of Connecticut.

PLANT: strong and healthy, does not resemble either parent; makes plants only sparingly, but makes a good fruiting row; the runners are strong, fairly productive, and very late; blossom, perfect.

FRUIT: the berry is medium in size, flat and conical; color, light, almost white on under side; texture firm; flavor fine.

FLESH: pinkish, meaty, good eating.

HAVERLAND.

A good market variety, which succeeds everywhere; widely grown; the berries are a little soft for shipment.

ORIGIN: with a Mr. Haverland, of Ohio.

PLANT: very vigorous; very healthy; foliage light in color; fruit stalk long and not always able to support the load of fruit; blossoms imperfect; very productive.

BERRY: size large; form long, conical; color bright scarlet.

FLESH: pinkish; texture soft; flavor sweet.

QUALITY: dessert fair; canning fair.

VALUE: near market first class; distant market second class.

SEASON: early.

HOWARD'S No. 4.

A seedling originated by Mr. A. B. Howard, of Massachusetts.

PLANT: a strong, healthy good grower, very productive.

BERRY: large, conical, very regular; bright dark scarlet; large, and of great beauty.

QUALITY: very good.

SEASON: medium to late.

IRENE.

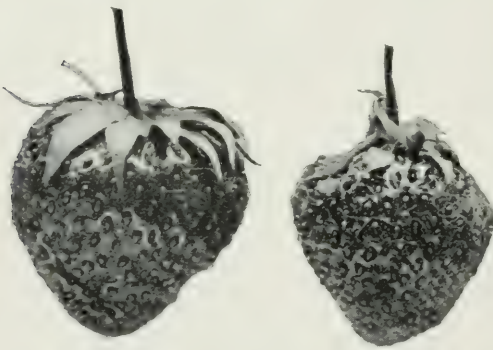
A good late variety, well worthy of a place in any collection for home use or market. Has been under test at the Ontario Agricultural College, Guelph, for eight years, and ranks among the first half dozen for productiveness, and general market value. An excellent canning variety because of its rich, dark color.

PLANT: not large but very vigorous and healthy; makes plenty of runners; blooms late, and is imperfect flowered, requiring a late blooming pollenizer to insure good fertilization; very productive.

FRUIT: medium size; good shape; very smooth and regular; rich, dark crimson in color, with bright yellow seeds and varnished appearance; very attractive; firm, and good shipper; brisk acid; fairly good quality.

SEASON: medium to late, has a long season of fruiting.

ADAPTATION: adapts itself well to varied soils, and has been reported upon favorably by experimenters all over the Province to whom it has been sent for co-operative testing. Has not done so well at Ottawa as at Guelph. (Hutt).



IRENE.

KLONDIKE.

A good late variety.

ORIGIN: Massachusetts.

PLANT: vigorous; somewhat subject to rust; easily propagated; quite productive.

BERRY: size large; form roundish conical, somewhat irregular; color scarlet; large yellow seeds.

FLESH: pink; moderately firm.

QUALITY: fair.

LOVETT.

A popular main crop strawberry; by some growers preferred to either Williams or Saunders.

ORIGIN: Crescent x Wilson, by J. H. Norris of Kentucky.

PLANT: vigorous; foliage somewhat subject to rust; fruit stalks short and drooping; perfect flowered; productive.



LOVETT.

BERRY: large; form round, conical; color dark red.

FLESH: color reddish; texture firm; flavor pleasant subacid.

QUALITY: dessert good; canning very good.

VALUE: near or distant market first class.

SEASON: medium.

LUTHER. (*August Luther*).

One of the extra early varieties; endures drouth well; succeeds generally.

PLANT: small; good grower; healthy; perfect in flower; fairly productive.

BERRY: medium; roundish conical, sometimes necked; color scarlet, with yellow seeds; texture moderately firm.

QUALITY: good.

VALUE: first class for early market.

SEASON: early; ripens with Michel.

MARGARET.

ORIGIN: Ohio, from the seed of the Crawford, by Mr. Beaver.

PLANT: large and strong, sending out the largest runners of any sort; very healthy; perfect blossom; quite productive.

FRUIT: large, very regular, crimson in color; seeds golden, solid and firm.

FLESH: red; inclined to tartness, but of good quality.

SEASON: medium.

MARSHALL.

This variety has perhaps received more favorable notice than most others of recent introduction. It is vigorous in growth, leaves very large and produces very large, beautiful, dark crimson berries of fine quality.



MARSHALL.

ORIGIN : a chance seedling found growing on a stone heap by Mr. Ewell, of Massachusetts.

PLANT : a vigorous grower, large leaves, somewhat tender both in foliage and blossom and subject to rust ; medium in color, first growth being yellow ; perfect blossom ; fruit stem strong and able to bear up the immense berries ; medium in productiveness.

FRUIT : of the largest size ; dark crimson, firm and fine looking, quite regular in shape, *i. e.*, each berry is of same shape, but ribbed and tough ; seed imbedded.

FLESH : red, with a dash of white in centre, solid, fine quality ; one of the best for dessert.

SEASON : early to medium.

ADAPTATION : does its best only on good soils and under highest cultivation ; a fine one for amateurs.

MASTODON.

This is very like Bubach both in plant and in fruit, and quite as good.

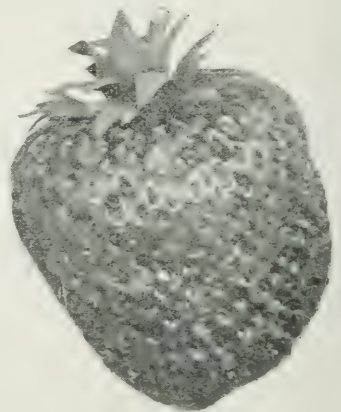
ORIGIN : introduced by James Lippincott, Jr., Mount Holly, N.J.

PLANT : strong, large dark foliage ; very healthy ; makes plants freely enough for a good fruiting row ; imperfect blossom ; fruit stalk is short, thick and strong.

FRUIT : very large ; bright crimson and very showy.

FLESH : pink ; medium as to firmness and good quality.

SEASON : medium.



MASTODON.

MICHEL.

A favorite very early berry with some growers: a comparative failure with others: widely planted in Ontario.

ORIGIN: chance seedling of Crescent found by J. S. Michel, Judsonia, Arkansas.

PLANT: vigorous; propagation rapid; fairly productive on some soils, on others not productive; foliage light colored; perfect flowered.

BERRY: size small to medium; form round conical; color dull red, withered appearance.

FLESH: pinkish; texture tough; carries well.

QUALITY: good.

SEASON: extra early.

MONITOR.

The Monitor originated from a chance seed in the orchard of L. T. Russell, Missouri, on ground where formerly Crescent and Capt. Jack grew. It has some of the qualities of both parents, the productiveness of the Crescent and the vigorous foliage of Capt. Jack.

PLANT: vigorous and healthy; foliage very dark green, glossy. The plant is small and makes almost too many runners; stands dry weather well and is very productive; blossom perfect.

FRUIT: the berry is large, roundish in form, and bright scarlet. The vigor of the plant seems to be such that it is able to mature and ripen its immense crop, there being no small berries

FLESH: firm and good flavor; pinkish inside.

SEASON: early to late.

NETTIE.

ORIGIN: one of Black's pedigree seedlings; it is a strong competitor of Hunn for extreme lateness.

PLANT: of medium size; quite healthy and a good runner, making plants freely; fairly productive; blossom imperfect.

FRUIT: large, ribbed, rough, of quite light color; seeds dark; flavor sour, but good; texture fairly firm.

FLESH: light colored, almost white.

NICK OHMER.

A good medium to late variety of excellent quality.

ORIGIN: seedling raised by John F. Beaver, of Ohio.

PLANT: vigorous, stocky; propagation easy; healthy; foliage dark; perfect flowered.

BERRY: large, with same small ones; form roundish conical, smooth and regular; color glossy red with yellow seeds.

FLESH: pinkish toward outside and white at centre; texture very firm; flavor very pleasant

QUALITY: very good.

VALUE: first to second class.

SEASON: medium to late.

ROBBIE.

ORIGIN: One of J. H. Black's pedigree seedlings, from New Jersey.

PLANT: good grower, perhaps not as large as the Nettie or Joe, but healthy and free from disease; fairly productive; blossom perfect.

FRUIT: good size; conical in shape; light red; good flavor: quite pleasant, though peculiar to the taste.

FLESH: salmon colored.

SEASON: late.

RIDGEWAY.

The Ridgeway is a good medium to late berry. It somewhat resembles the old Cumberland, but is darker.

ORIGIN: a seedling of Jersey Queen and Parker Earle, by Mr. Ridgeway, of Indiana.

PLANT: strong and healthy, stools out, would be a good one for hills or narrow rows; foliage free from rust; blossom perfect and large; quite productive.

BERRY: medium to large; highest scarlet color; prominent golden seeds, fine looking; medium in firmness.

FLESH: red, solid and very good quality; fine flavored.

SEASON: medium to late.

RUBY.

A good standard variety, which adapts itself well to various soils and localities. Has been under test at the Ontario Agricultural College, Guelph, for nine years and ranks first among nearly three hundred varieties tested for that number of years.

ORIGIN: a chance seedling with Mr. Riehl, of Illinois.

PLANT: a strong, vigorous grower, makes plenty of runners; blooms about midseason; is perfect flowered and a good pollinizer; very productive.

BERRY: large, regular in shape; a good dark crimson color; firm, and of good quality.

SEASON: midseason.

ADAPTATION: does well at Guelph, and is favorably reported upon from other sections. (Hutt).



RUBY.

SAMPLE.

A profitable late market berry.

ORIGIN: Massachusetts.

PLANT: vigorous; healthy; productive; flowers imperfect.

BERRY: size large; form roundish conical; color crimson.

FLESH: tinted; texture fairly firm, juicy.

QUALITY: fair.

VALUE: market first class.

SEASON: very late.



SAMPLE.

SAUNDERS.

A first class sort for medium to late market.



SAUNDERS.

ORIGIN: a seedling raised by John Little, Granton, Ont., and named by him in honor of Dr. Wm. Saunders, of Ottawa.

PLANT: healthy, very little rust; very vigorous; very productive; blossom perfect; blooms late and so escapes the spring frosts; propagates easily.

BERRY: size large; form roundish conical; color glossy crimson.

FLESH: red; texture firm; flavor very pleasant.

QUALITY: dessert or cooking very good.

VALUE: near or distant market first class.

SEASON: medium to late.

SEAFORD.

The Seaford is a good, medium season berry.

ORIGIN: a chance seedling, introduced by Slaymaker & Son, of Dover, Del.

PLANT: a strong, vigorous grower and healthy, producing large clusters of fine fruit; makes many plants; perfect blossom; very productive.

BERRY: large and fine looking; bright crimson with gold seeds imbedded; very solid and firm.

FLESH: scarlet in color; very firm and of very good quality.

SEASON: early to medium.

SHARPLESS.

The Sharpless has been before the public for a long time. In some parts it is still said to be one of the best, but in other places it is not productive enough to make it profitable for market.

ORIGIN: Pennsylvania.

PLANT: a strong, vigorous grower, large and healthy; no rust; perfect blossom; quite productive on some soils.

FRUIT: very large; light scarlet in color; glossy, gold seeds prominent, does not color well.

FLESH: white to pink; firm and very best quality; fine for the table.

SEASON: medium.

SMITH.

Very popular for canning, having the agreeable acid and firm flesh of its parent.

ORIGIN: a seedling of that old favorite, the Wilson's Albany, raised by L. Smith, of Wisconsin.

PLANT: healthy; most vigorous; blossom perfect; very productive.

BERRY: medium to large; roundish conical; irregular; color scarlet.

FLESH: texture firm; quite acid; agreeable.

QUALITY: canning or preserving, best.

VALUE: market first class.

SEASON: early.

 SLENDID.

A first-class early to mid-season market berry.



SLENDID.

ORIGIN : by C. H. Sumner, Illinois.

PLANT : very healthy ; a good strong grower ; productive ; blossom perfect ; a good pollinizer.

BERRY : medium to large ; form roundish ; color dark crimson.

FLESH : firm ; flavor good.

QUALITY : dessert very good.

VALUE : market first class.

SEASON : early to medium.

STAPLES.

ORIGIN : from seed of the Warfield by the late Mr. Staples of Ohio.

PLANT : quite healthy, making plenty of runners for a wide row, if needed ; quite vigorous in growth ; perfect blossom ; a good early bloomer to fertilize early pistillates with.

BERRY : dark crimson in color, firm and good flavor ; color very like Warfield ; size medium to large for so early a berry.

FLESH : pink and solid ; good flavor, somewhat acid, yet spicy.

SEASON : extra early.

 TENNESSEE. (*Tennessee Prolific*).

A very fine market berry, which has become popular wherever grown.

ORIGIN : Crescent x Sharpless, raised by Captain Hodges, of East Tennessee.

PLANT : healthy ; vigorous ; very productive ; easily propagated ; blossom perfect : blooms early.

BERRY : large ; form round conical, sometimes double at the point ; color bright crimson.

FLESH : color red ; texture firm ; flavor agreeable.

QUALITY : good.

VALUE : first class for near or distant market.

SEASON : medium.

TIMBRELL.

A fairly good late variety.

ORIGIN : chance seedling found by H. S. Timbrell of New York State.

PLANT : healthy ; vigorous ; blossoms perfect ; not very productive.

BERRY : size medium to large ; form roundish conical ; color crimson, but does not color well.

FLESH : texture very firm ; flavor agreeable.

QUALITY : dessert best.

VALUE : market second class.

SEASON : late.

VAN DEMAN.

One of the earliest ; a favorite with some growers, but not a success everywhere.

ORIGIN : Crescent x Captain Jack : raised by J. C. Bauer, of Judsonia, Arkansas.

PLANT : vigorous ; productive ; rusting slightly on some soils ; foliage dark ; fruit stalk strong enough to support the fruit ; blossoms perfect.

BERRY : medium ; form round conical ; color dark crimson ; seeds yellow, with a varnished appearance ; ripens and colors all over at the same time.

FLESH : color pink ; texture firm, a good shipper ; flavor good.



VAN DEMAN.

QUALITY : dessert very good.

VALUE : first class for market because of its season.

SEASON : very early.

WARFIELD

This variety holds first place for productiveness among 350 varieties which have been under test at the Ontario Agriculture College for the past ten years. With the housekeeper it is a favorite canning variety because of its dark rich color. It is one of the most desirable varieties for general cultivation, where the soil is not too light and dry for its growth.

ORIGIN : a chance seedling, supposed to be a cross between Crescent and Wilson, found by B. C. Warfield of Southern Illinois.

PLANT : small, but a rampant grower and often makes too many runners, filling the rows too thickly. Succeeds best on moist soils, and in showery seasons ; often proves a failure on very dry soils, or in times of drouth. Blossoms early and requires an early blooming bisexual variety, such as Splendid or VAN DEMAN, to fertilize its blossoms ; very productive.

BERRY : medium size, very regular in shape, dark rich crimson color ; firm, good shipper, and excellent for canning ; somewhat acid, but good quality.



WARFIELD.

SEASON : early to midseason, holds out well if season is favorable.

ADAPTATION : does well wherever the soil is not too light and dry.

Howe.

WILLIAMS.

Widely grown in Ontario in place of the old favorite Wilson; preferred by some growers to all others.



WILLIAMS.

ORIGIN: a seedling of Sharpless, raised by Mr. Williams of Burford, Ontario.

PLANT: vigorous; somewhat inclined to rust, runners abundant, short; blossom perfect; very productive.

BERRY: large, form roundish conical; seeds sunken; color crimson, usually with a white tip.

FLESH: red; often hollow; texture firm.

QUALITY: fair.

VALUE: market first class.

SEASON: medium to late.

WOOLVERTON.

ORIGIN: a seedling raised by John Little, of Granton, near London, Ontario, and named by him in honor of Linus Woolverton, Grimsby.

PLANT: a strong, healthy grower; withstands drouth well; deep rooted; foliage dark colored; runners numerous; blossoms perfect; moderately productive.

BERRY: very large; form broad conical, often wedge shaped; color crimson with crimson seeds; showy.

FLESH: red; texture firm; flavor mild acid.

QUALITY: good.

VALUE: first class for home use or market.

SEASON: late.

Appendix.

SPRAYING.

Spraying is absolutely necessary nowadays to ensure good fruit every year. There are so many injurious insects and fungous diseases which attack the trees and fruit that it is very rarely a tree, if unsprayed, will escape being affected by something which will lessen the crop of No. 1 fruit.

Spraying is not sprinkling, and in order to get good results it is necessary to apply the mixtures and solutions in as fine a spray as possible. A mist-like spray that will float through the air and envelop the tree and fruit is what is required. A coarse spray will run off the foliage and often will accumulate at the tips of the leaves and cause injury rather than benefit the tree. Thoroughness is just as essential in spraying as in anything else. In spraying for most fungous diseases the object is, to cover all of the surface of the leaf and fruit with the mixture so that when a spore comes in contact with it, it will be destroyed. The more of the surface that is left uncovered the more spores will germinate, and as they are usually present in millions the necessity of thorough spraying should be apparent. In spraying to control biting insects, thoroughness is just as essential, for unless the poison is well distributed many of the insects will not be destroyed and much injury will be done. In fighting insects, such as the San José Scale, the Aphis, and the Oyster Shell Bark Louse, which are killed by contact poisons, thoroughness is even more necessary, as these multiply so rapidly that a few insects which escape may soon reinfest the whole tree.

Spraying should be timely. Very often through ignorance of the habits of the insect or disease, spraying is delayed until after the season is passed when it could be controlled; hence time and money are often thrown away and the lack of success in spraying is blamed on the ineffectiveness of the mixture rather than the lack of knowledge of the man who sprayed. It is true that every man cannot learn the life history of all injurious insects and diseases, nor is this really necessary, but the average orchardist should know more about them than he does.

Every fruit grower should have a spray pump of some kind. The amateur may be content with a small hand pump which will suit his purposes quite well, but the commercial grower should have a barrel pump or one of the power sprayers which are now on the market, and which permit of obtaining that mistlike spray already referred to. Labor is expensive and hard to get on the average farm, hence a sprayer should be purchased which will economize time and labor as much as possible.

The following spray calendar will, it is believed, give nearly all the information which the average fruit grower requires. Descriptions of insects and fungous diseases are not given in this work, as they are dealt with at length in special publications.

DIRECTIONS FOR TREATMENT OF INSECT PESTS AND PLANT DISEASES.

FORMULÆ.

1. BORDEAUX MIXTURE (For Fungous Diseases).

Copper Sulphate (Bluestone).....	4 pounds.
Quick lime (fresh).....	4-6 "
Water.....	40 gallons.

In making this mixture, observe the following precautions and directions :

1. *Use nothing but fresh quick-lime.* Owing to variability in the qualities of lime as found in different parts of the Province, it is safer for the average fruit grower to use the larger quantity named above, viz., 6 pounds. The lime should be slowly slaked by the gradual addition of water.

For convenience, stock solutions of milk of lime and bluestone should be prepared and kept in different barrels in readiness for spraying operations. In barrel No. 1, 25 pounds of fresh lime are gradually slaked, and barrel made up to 25 gallons of water ; in barrel No. 2, 25 pounds of copper sulphate, or bluestone, are dissolved in 25 gallons of water. For rapid dissolving use warm water. These are stock solutions. Each gallon of milk of lime contains one pound of lime, and each gallon of bluestone solution contains one pound of bluestone. When we wish to make up a barrel of Bordeaux mixture, we take out 4 gallons of milk of lime, if using the 4-pound formula, or 6 pounds if using the 6-pound formula, and 4 gallons of bluestone solution, and either dilute each in separate barrels in about 20 gallons of water before mixing in the barrel attached to the spray-pump, or else pour each separately into the barrel in which are already 30 to 32 gallons of water, according to formula used. The first method is the preferable one.

2. *Never mix the concentrated stock solutions together.* If the milk of lime and bluestone are mixed in the concentrated form, just as they are taken from the stock solution, a precipitate of a flakey nature will soon settle out, and either fall to the bottom or clog the nozzle.

3. *Test the Bordeaux to find out whether sufficient milk of lime has been added.* This is most easily done by means of the ferrocyanide test. A saturated solution of this substance can be purchased at any druggist's for a few cents. In testing, place some of the Bordeaux, which has been thoroughly stirred, into a saucer, and add a few drops of the ferrocyanide. If sufficient lime has been used, no discoloration will appear, but if insufficient, a deep dark brown color will be produced.

4. *Always strain the milk of lime* to prevent gritty particles from clogging the nozzles.

5. *Use a fine nozzle ;* do not soak or drench the tree.

6. *The stock solutions will keep,* but the Bordeaux mixtures becomes useless after standing for a day or two.

2. THE COMBINATION BORDEAUX AND PARIS GREEN MIXTURE. (For Fungous Diseases and Leaf-eating Insects.)

This mixture is prepared like the Bordeaux, but 4 to 6 ounces of Paris green are added and thoroughly stirred before spraying.

Copper sulphate (Bluestone).....	4 pounds.
Quick lime (fresh).....	4-6 "
Paris green	4-6 ounces.
Water (1 barrel).....	40 gallons.

In small quantities it may be made as follows :

Bluestone	4 level tablespoonfuls
Quick lime.....	4-6 "
Paris green.....	1 "
Water.....	1 pail (2 gallons).

3. AMMONIACAL COPPER CARBONATE SOLUTION.

Copper carbonate.....	1 ounce.
Strong ammonia sufficient to dissolve the copper carbonate, usually more than.....	$\frac{1}{2}$ pint.
Water	10 gallons.

This solution is not much used, and is recommended only in cases where the fruit is so far advanced that it would be disfigured by using the Bordeaux mixture.

4. POTASSIUM SULPHIDE (Liver of Sulphur).

(Used to control Gooseberry Mildew).

Dissolve 4 ounces in 8 gallons of water.

5. PARIS GREEN MIXTURE. (Liquid). For Leaf-eating Insects.)

Paris green	1 pound.
Water.....	150 gallons.
Quick lime.....	2 pounds freshly slaked.

Or,

Paris green.....	1 teaspoonful (level).
Water.....	1 pail (2 gallons).
Quick lime.....	1 teaspoonful (level).

Paris Green Mixture. (Dry.)

Paris green	1 pound.
Flour or dust.....	100 pounds.

7. HELLEBORE.

White hellebore (fresh)	1 ounce.
Water.....	2 gallons.

8. PYRETHRUM, or Insect Powder.

Pyrethrum powder (fresh).....	1 ounce.
Water.....	3 gallons.

Or,

Pyrethrum powder	1 ounce.
Flour (cheap).....	5 ounces.

Mix thoroughly, allow to stand over night in a closed box, then dust on plants through cheese-cloth.

9. KEROSENE EMULSION (for Bark-lice and Plant Lice).

Hard soap	$\frac{1}{2}$ pound, or soft soap	1 quart.
Boiling water (soft)		1 gallon.
Coal oil		2 gallons.

After dissolving the soap in water, add the coal oil and stir well for 5 or 10 minutes. When properly mixed, it will adhere to glass without oiliness. A syringe or pump will aid much in this work. In using, dilute with from 9 to 15 parts of water. Kerosene emulsion may be prepared with sour milk (1 gallon) and coal oil (2 gallons), no soap being required. This will not keep long.

10. TOBACCO DECOCTION.

Refuse tobacco	2 pounds.
Water	5 gallons.

Boil the mixture for 30 minutes or more, until a dark brown tea-colored solution is obtained. Keep it covered until cool. It may then be used undiluted for spraying infested plants.

11. WHALE OIL SOAP.

For Plant Lice. 1 pound in 7 gallons hot water.

For San José Scale in winter. 2 pounds in 1 gallon hot water applied as the buds are swelling.

12. LIME SULPHUR MIXTURE.

Quick lime	20 pounds.
Flowers of sulphur	15-20 "
Water	1 barrel.

To prepare, have 12-14 gallons of boiling water in the barrel or kettle, throw in the lime and add the sulphur, which should preferably have been mixed previously into a paste with hot water. The whole mixture should then be boiled until the characteristic green color is obtained. The time required varies with the kind of lime used and may take from $\frac{3}{4}$ to $1\frac{1}{2}$ or 2 hours. Dilute with hot water to fill up the barrel and spray while warm.

13. WASH FOR BORERS.

First, add soft soap to a saturated solution of washing soda to make a thick paint, then add 1 pint crude carbolic acid, and $\frac{1}{2}$ pound Paris green to 10 gallons of wash.

To be applied to the trunks of apple trees in early June.

14. LIME WASH.

(For Oyster-shell Bark Lice, etc.)

Slake $1\frac{1}{2}$ pounds fresh lime in 1 gallon of water. Strain the wash before spraying. To be applied during winter to trees infested with oyster-shell bark lice.

TREATMENT.

APPLE AND PEAR.

A. Against Leaf-eating Insects and Fungous Diseases.

Treatment.	When to spray.	Insect pests and diseases controlled.
1. Paris Green in water. (Formula 5.) (Important.)	Just as leaf-buds are expanding.	Bud-moth, case-bearers.
2. Bordeaux mixture and Paris green. (Formula 2.)	About a week later.....	Bud-moth, case-bearers, canker-worms, tent-caterpillars. Scab, leaf-spot and mildew.
3. Bordeaux and Paris green. (Formula 2.) (Important.)	Just before blossoms open...	Canker-worms, tent-caterpillars, etc. Scab and leaf-spot, etc.
4. Bordeaux and Paris green. (Formula 2.) (Important.)	Just after blossoms fall	Codling-moth, canker-worms, tent-caterpillars, pear-slug. Scab and leaf-spot.
5. Bordeaux and Paris green. (Formula 2.)	Ten days or two weeks later	Codling-moth, Palmer worm, apple Bucculatrix. Scab and leaf-spot, etc.

Codling-moths cannot always be controlled by spraying, especially in the south-western section of Ontario, where a second brood appears later in the season.

In addition to spraying, in this district, use bandages around the trees. Make them from four to six inches wide, three or four inches thick, of any kind of cloth. Old bags, sacks, carpets, coarse material of any kind will do. Bands of straw and tow have been used with some success. During the first week in June bind one around each tree three or four feet from the ground; secure it either with cord or small nails; *take it off every twelve days*, and carefully examine for codling cocoons. These may be readily destroyed by crushing. Replace the bands as before.

Tent-caterpillars are controlled by burning the webs or nests in May; by collecting and destroying the clusters of eggs in fall and winter; by banding the trees; and by spraying the young caterpillars with Paris green.

Canker-worms may be largely controlled by banding the trees in autumn and early spring; and by spraying with Paris green when the worms appear.

B. Against Sucking Insects, such as Plant-lice and Scale Insects, and against Pear Leaf Blister-mites.

Treatment.	When to Spray.	Insects controlled.
1. Kerosene emulsion (Formula 9). (1 part in 10 parts water).	Before buds start in spring.	Pear-leaf blister-mite.
2. Kerosene emulsion solution (1 part emulsion to 10 parts water). Or whale-oil soap solution (Formula 11), (1 lb. to 7 gals. water).	As leaves are unfolding	Pear psylla and aphids.
3. Kerosene emulsion (Formula 9), whale-oil soap as before.	Ten days later.	Psylla and aphids.
4. Kerosene emulsion (Formula 9), or whale-oil soap as before. Or lime wash (No. 14).	About end of May or first of June. During winter.	Oyster-shell bark-lice.

C. Treatment for destroying *Borers* :

- (a) Dig out the borers whenever possible.
- (b) Apply the soap-soda wash (Formula 13) in early June.

PLUM AND CHERRY.

A. Against Curculio, Brown Rot, Shot-hole Fungus, and Leaf-eating Insects.

Treatment.	When to spray.	Insects and diseases controlled.
1. Bordeaux and paris green. (Formula 2.)	When leaf-buds are opening.	Brown rot, shot-hole fungus.
2. Bordeaux and paris green. (Formula 2.)	When fruit is formed.	Curculio, green fruit worms, brown rot, etc.
3. Bordeaux and paris green. (Formula 2.)	Two weeks later.	Brown rot, curculio, etc.
4. Ammonia-copper-carbonate solution. (Formula 3.)	When fruit is large.	Brown rot, etc.

The *Curculios* are most readily controlled by jarring the trees in early morning, and collecting them on a sheet spread under the tree. The jarring should be begun when the fruit has set, and continued for three weeks. Thrice a week is often enough to jar.

B. Against Plant-lice and Scale Insects.

Treatment.	When to spray.	Insects controlled.
1. (Kerosene emulsion Formula 9), (1 part to 4 parts water.) Or whale-oil soap, (2 lbs. to 1 gal. hot water.)	In winter or early spring.	Plum scale, San José Scale, etc.
2. Kerosene emulsion (Formula 9), (1 part to 10 parts Water.) Or whale-oil soap solution (Formula 11), 1 lb. to 7 gals. water.) Or tobacco solution (Formula 10.)	As soon as lice appear on young leaves.	Plant-lice.

PEACH.

A. Against Peach-leaf Curl, Brown Rot, Curculio, Bud-moth.

Treatment.	When to spray.	Insects and diseases controlled.
1. Bordeaux and Paris green. (Formula 2.)	Before flower buds open	Bud-moth and peach leaf curl, brown rot.
2. Bordeaux and Paris green. (Formula 2.)	After blossoms fall.....	Peach-leaf curl, brown rot, bud-moth and curculio.
3. Bordeaux and Paris green. (Formula 2.)	Two weeks later.....	Brown rot, etc.
4. Ammonia-copper carbonate (Formula 3.)	When fruit is well-formed.	Brown rot, etc.

B. Against Aphids, and Scale Insects.

1. Kerosene emulsion (Formula 9), (1 part in 10 parts. Or whale-oil soap (Formula 11), (1 lb. in 7 gals. water.	Whenever young lice appear.	Aphids.
2. Whale-oil soap, (2 lbs. in 1 gal. hot water.	In early spring before buds open.	San José scale.

C. Against Peach Tree Borer.

1. Prof. Slingerland recommends *gas tar* as a trunk wash. A trial experiment should be made first on a few trees to find out if it injures the trees, for gas tar varies in composition.

- 2. Dig out or probe the borers every fall and spring ; and mound up a new base with earth for six inches ; remove and examine in September.
- 3. Apply Formula in early June.

GRAPE.

A. Against Black Rot, Mildews and Leaf-eating Insects.

Treatment.	When to spray.	Insects and diseases controlled.
1. Bordeaux and Paris green. Formula 2.) (Important.)	As buds begin to swell.	Flea-beetle, black rot, mildews.
2. Bordeaux and Paris green. Formula 2.)	Ten days or two weeks later, before blossoms open.	Black rot, mildews and flea-beetles.
3. Bordeaux and Paris green. Formula 2.)	Just after blossoming.	Black rot and mildews.
4. Bordeaux and Paris green. Formula 2.)	Two weeks later.....	Flea-beetle and black rot.
5. Ammonia-copper carbonate. Formula 3.)	When fruit is well formed.	Black rot and mildews.

B. Against Grape Thrip.

1. Kerosene emulsion, 1 part in 9 parts water.	Soon after leaves are formed.	Thrip or leaf-hopper.
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REPORT

OF THE

FARMERS' INSTITUTES

OF THE

PROVINCE OF ONTARIO

1905.

PART I.—FARMERS' INSTITUTES.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

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To the Honourable WILLIAM MORTIMER CLARK, K.C.,

Lieutenant-Governor of the Province of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the pleasure to present herewith for the consideration of your Honour the Report of the Farmers' Institutes of Ontario for 1905.

Respectfully submitted,

NELSON MONTEITH,

Minister of Agriculture.

TORONTO, 1906.

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ELEVENTH ANNUAL REPORT
OF THE
FARMERS' INSTITUTES OF ONTARIO
FOR THE YEAR
1905.

ANNOUNCEMENT OF SUPERINTENDENT.

I have the honor to present herewith the Eleventh Annual Report of the Superintendent of Farmers' Institutes. The series of meetings held during the year 1904-5 had been planned to my entire satisfaction for the months of January and February, but on account of the Provincial elections it was thought wise to postpone the January meetings and combine them with the regular February series. This necessitated the securing of a much larger number of speakers, and, of course, the composition of the various delegations was necessarily not quite so strong as when a less number of meetings are held at the one time. The reports, however, from the various Institutes indicated general satisfaction with the speakers furnished. The most serious drawback was the unfavorable weather and almost impassable roads in many parts of the Province. The attendance and membership suffered materially on account of these adverse conditions. We are hoping that the expected satisfactory results of the campaign for 1905-6 may not be interfered with by unfavorable weather.

The Institute report will, as usual, be issued in three parts: Part I, in which this letter of transmittal appears; Part II, Report of Women's Institutes; Part III, list of meetings to be held during 1905-6, speakers with their subjects, statistics, and Convention of Institute officers and lecturers.

SPECIAL FEATURES.

During the past season we encouraged the Institute officers and directors to arrange for as many judging classes as possible, in connection with their regular and supplementary Institute meetings; and the reports from Institutes where this line of work has been taken up is most encouraging. The speakers who have given instruction of this nature are highly satisfied with the results and have asked that the work be extended as far as possible. We are arranging to have score cards printed for use at judging classes during the coming winter. Work along the line referred to has been taken up with the following classes of stock,—beef cattle, dairy cattle, heavy and light horses, sheep, and swine. Instruction in judging calls for Institute speakers of exceptional ability; and we are pleased to announce that we have a number of well known breeders secured for the coming season's work. The time has arrived when only judges of unquestionable ability can be depended upon to conduct judging classes.

Due prominence has been given to the following topics during the past winter: Eradication of weeds, selection of seed grain, the proper care and handling of milk for cheese factories and creameries, and the necessity for uniform and advanced methods of breeding throughout the various sections of the Province; and it is the intention of the Department to continue to give prominence to these features during the coming season's work. Sets of mounted specimens of some 30 of our most noxious weeds have been secured for the use of the Institute speakers. A small pamphlet on methods of eradication will be furnished to Institute Secretaries for distribution at the various meetings. It is not unusual to hear good farmers state that during the past two or three years, weeds have been gaining headway upon their farms; and it is the aim of the Department to instruct the farmers as to the best means of prevention and eradication.

FARMERS' CLUBS.

It is considered on all sides that much good has been done through the medium of Farmers' Institutes: indeed it is surprising to most of us that such marked results have attended these spasmodic efforts, for the holding of only one meeting a year at each place, can be designated by no other term.

Would it not be well for the farmers in each locality, which means three or four communities in each township, to form clubs for the discussion of agricultural topics of most importance in the respective districts. The reports from Institute lecturers as to the excellence of meetings held in localities where such clubs have been established is an incentive for us to recommend and further such work as far as possible. We have no hesitation in advising farmers to form such clubs, but in the best interests of their work they should not look to the Department for too much assistance, but rather utilize their organizations as a means of making better use of agricultural papers, books on various phases of farming and the literature sent by the Department to members of the Institute. There are endless subjects which will form a basis for discussions and debates for a number of meetings each year. We would suggest the following rules and regulations for local clubs:

SUGGESTED RULES AND REGULATIONS FOR THE FORMATION AND CONDUCTING OF FARMERS' INSTITUTE CLUBS.

(1) The organization of a Farmers' Institute Club may take place at a regularly called Farmers' Institute meeting or at a meeting called for the special purpose. At least two weeks' notice of a specially called meeting must be given in the local papers or by poster; and all members shall be constituted members of the Farmers' Institute for the riding by paying the annual fee of 25 cents; said fee, with name and address, to be sent to the secretary of the Riding Institute. By the consent of the District Executive, five or ten cents per member may be retained for local purposes. Only members will be allowed to hold office or have a vote in elections. All farmers will be made welcome to meetings and have a voice in discussions.

(2) Those in attendance at the organization meeting should appoint a President, Vice-President, Secretary-Treasurer, and a committee of four or more. The committee should consist of about an equal number of old and young men. At each meeting one of the committee should drop out and be replaced by one elected by the meeting.

(3) The President shall preside at all meetings; in his absence the Vice-President; in the absence of both, the members in attendance shall choose a chairman from among themselves (a member of the committee preferred).

(4) The committee shall arrange for the hour and place of each meeting, subjects to be discussed, speakers, etc. It would be well to have subjects to be taken up from time to time approved of by the meeting.

(5) Any expense incurred in providing a suitable place of meeting shall be covered by a collection; or, preferably, an additional fee, in case the proportion of regular fee retained does not cover expenditure.

(6) The proceedings of each meeting shall be recorded by the secretary, and a report of membership and other items of interest sent to the secretary of the Riding Institute at least every three months.

(7) No subject shall be presented at a Club meeting, or discussion allowed, of a political or sectarian nature.

(8) It would be well to make provision at some of the meetings, if not all, for recitations or music, to occupy a limited portion of the time.

NOTE.—The Department of Agriculture shall, from time to time, furnish programmes of lessons to be taken up by clubs which comply with above regulations. These will be chiefly of a suggestive nature, and will contain references to papers and addresses bearing on the subject in hand, as contained in literature now furnished to members of Farmers' Institutes.

WOMEN'S INSTITUTES.

The growth of the Women's Institutes during the past year has been most gratifying. The number of District Institutes is now 69, with 208 branches, while the membership is nearly 8,000, with an attendance for the year ending June, 1905, of about 55,000. The increase in District and Branch Institutes is due largely to the organization which has taken place throughout the northern parts of the Province, although a great many of the old established Institutes have extended their work by the formation of additional branches. While the subjects taken up at Women's Institute meetings during the first few years of their existence were confined largely to the different lines of cooking, the subjects dealt with now are much more comprehensive. The subjects given below will illustrate the work taken up.

Entertainment on the Farm.	How the German Housekeeper
Household Sewing and Exchange	Manages.
of patterns.	Home and Home life.
Housekeeping fifty years ago.	Care of Winter Bulbs.
Laundry Work.	Care of Beds and Bedding.
Color and its effect on the interior of the house.	Fresh Air vs. Doctor Bills.
Typhoid Fever.	Winter Care of Poultry.
Shopping Wisdom.	Growing of Dahlias.
Cleaning the Cellar.	Hygiene and Ventilation.
Mother's Duties.	Christmas Presents.
Good Form in Public Places.	Water and its Uses.
Cheerfulness.	Historic Subjects and Characters, as found in Canadian History.

We could extend this list almost indefinitely by referring to reports received from Secretaries of Institutes.

ANNUAL CONVENTION.

The report of the Convention of Institute Speakers and workers as given in Part III, is worthy the attention of all Institute directors. There are two or three matters in this report which might well be repeated here, in order that the attention of all members may be drawn to the same.

There is great need of promptness on the part of those who attend Institute meetings. The delegates report that at most meetings it is from half an hour to an hour and a half after the time advertised before the meeting is opened. This leaves a limited amount of time for the asking of questions and discussion, which feature should be made the most valuable portion of the session. Get to the meetings on time, if possible. It would add mater-

ially to the usefulness of Institute meetings, if the farmers would go to the meetings prepared to ask questions. They are familiar with local conditions and should be able to give results of experience and ask questions which would enable the speakers sent to be of the greatest benefit in solving difficulties and suggesting improvement in methods.

There is a misunderstanding on the part of Institute members as to the amount of literature sent to each member. The amount of useful information furnished is as great as formerly, but the number of volumes is somewhat less, on account of a number of reports upon similar topics now being included under one cover. For instance, separate reports were at one time issued by the swine breeders, sheep breeders, cattle breeders, poultry breeders, etc., but are now issued as Report of Live Stock Associations. It will thus be seen that while Institute members do not receive fully as much useful material.

PAPERS AND ADDRESSES.

The accompanying volume contains only a limited number of the papers and addresses received from Institute speakers and secretaries. We have, however, selected those which we thought would be of most value, and beg to draw the attention of readers to the necessity of referring to reports received this year as well as those sent out in former years for information along agricultural lines not dealt with in this volume. Keep your reports on file for reference, as the great majority of articles appearing in back reports are applicable to present day conditions.

QUESTIONS AND ANSWERS.

We wish to refer our readers to "Questions and Answers" given in the back part of this volume. These have been classified under various headings and will be found very instructive to the average reader and would also form a basis for discussion at Farmers' Institute Clubs.

GEO. A. PUTNAM.

SELECTED PAPERS AND ADDRESSES.

HIGH VERSUS LOW FARMING.

By E. C. DRURY, B.S.A., CROWN HILL, ONT.

Through all the many and varied forms of agriculture under which man has made the soil minister to his needs, and bring forth those things necessary to his life, two clear and opposite divisions are at once apparent to the man of thought. From the earliest to the most modern times, from the tropics to the farthest polar limits of agricultural growth, wherever men have practised agriculture, they have fallen into one or other of these divisions, the dividing line of which is one of principle rather than of mere practice. On the one hand, men have sought merely present returns from the soil, without thought of the future, or of the generations of men who must succeed them. On the other hand, men have sought along with the present returns which they require, to so treat the soil that each succeeding year, each succeeding generation of men, shall find it more fertile, and better adapted to supply those things required by man. It is this division between men who, in their treatment of agricultural resources, think only of the present, and pilfer, as it were the accumulated stores of a bountiful nature, and those who, treating her as a friend and confirming to her laws, seek to increase her wealth, as well as to supply their own needs, that constitutes the division between low and high farming.

Low farming has been and will be the vice of new and cheap land, and of a thinly scattered, unsettled agricultural population. Cheap and plentiful land, a people not rooted by affection to their farms, and above all ignorance of the laws of nature, have combined in the spoliation of the soil, and have reduced to comparative barrenness much land whose natural fertility fitted it to become the permanent and happy home of a thrifty and contented population. In the old world, these causes, aided by war and pillage, have reduced many fertile areas, once the home of teeming millions, to arid deserts. In the new world these causes alone have resulted in the deterioration and even desertion of much land which should have had a little better fate. Such, for example, are the abandoned farms of New England. Such also are many parts of the Cotton States, where slave labor, greed and ignorance combined to curse the soil. Such, too, are many parts of the fertile prairies, where careless methods of agriculture have resulted in the removal of fertility, the fouling of the land with weeds, and a general reduction of the agricultural value of the land.

But it is not in the depletion of the soil, melancholy as that may be, that the most noticeable affects of low farming are seen. The results to the population are even more melancholy than to the soil. Ignorance, listlessness and lack of interest in their calling, are among its first results to the people, if indeed they are not properly causes of low farming. Deteriorating land whose lessened yields cannot meet the needs of an increasing population, results in poverty, in the breaking up of families, in enforced emigration, and finally if carried far enough, in the entire desertion of the land. The people given to the practice of low farming must, so soon as the natural fertility of the land is so reduced as to no longer yield a livelihood, become

a moving people, constantly moving on to other pastures and sacrificing, with all its fine results, that affection which binds a family to a certain spot of land through generations. In short any people given to the practice of low farming sacrifice all, or nearly all, the virtues and joys which of right belong to an agricultural people, and though at first they may acquire wealth, their end is always a melancholy one.

On the other hand high farming, the object of which is to increase and preserve the agricultural resources of the country and of the farm, as well as to reap present benefits, is the product of scarce, high priced land, which must be treated in the best possible way and made to yield the greatest possible amount of crop in order to pay at all. It is further the result of the labor of an intelligent, thrifty, home-loving people, who consider, as all men should do, the well-being of those who come after them, and who labor for the future as well as the present. This class of people, though in an important sense working for others, reap as they sow, and receive their reward in increasing returns from their land, in increasing wealth, and above all, in its effects upon themselves, becoming intelligent and interested in their work, and finding all the joys that should of right belong to an agricultural people, the love of their land and that condition of peace and happiness which comes to a permanently settled, thrifty people.

In Ontario at the present time, we are at the dividing of the ways. The virgin soils of a few years ago are becoming, where low farming has been followed, considerably exhausted. In many parts we have farms, now used for pasture only, which once were tilled, but which, through careless methods of farming have become so depleted of fertility as to be good only for grazing. On many other farms, while the deterioration has not been so rapid, it has nevertheless reduced to a very considerable extent the natural fertility of the land, which is now in a condition very far from that of virgin richness. On some few farms, the opposite course has been obtained, and the land is in as good a condition as it ever was, and possibly in some cases in a better condition than when it was first cleared of the forest. Among our people we have all grades of farming, from the careful systems of cropping followed by up to date farmers, to the wasteful and too often careless methods of the old style farmers. In some sections high farming prevails, and it is rare to find a man who is not making an intelligent study of the problems of the soil. In other sections, and in some instances these are among those blessed by nature with the best of soils, the worst of methods or lack of methods, prevails. We are not yet fixed in either way, and it is an interesting question for those who study the agricultural future of our Province, and one well worth spending thought upon. We have here the two conflicting principles of good farming, with all that it means to us as a people, and of bad, including all the evils it carries with it. Which of these is to triumph and decide our destiny for us? Let us see.

The principles of advanced agriculture are too firmly fixed among us even to die out, *because they pay*. The man who, but a few years ago, was laughed at as a visionary or reproached with being a book farmer, because he dared to change the methods of his fathers for more scientific ones, is no longer laughed at, because he is, in most of cases, a success. In some rare sections it is true such dense ignorance of agricultural principles prevails that any suggestion of different or improved methods meets with ridicule or opposition, but these sections are the exception rather than the rule. In most sections we find farmers willing and eager to learn or to copy from their more advanced neighbors. A moment's comparison of the

methods followed in most sections at the present time, of the amount of live stock kept, of the amount of clover sown, with the conditions in these same sections only ten years ago, will suffice to show us that this is the case, and will serve to indicate how far the leaven has progressed toward leavening of the whole lump. Not only have our agricultural methods improved, but an equal improvement has taken place in our farmers themselves, in their intelligence and knowledge and in the interest they feel in the work. The bad farmers are one by one being shoved to the wall, and their farms occupied by those who will adopt better methods. In short throughout the whole country partly by means of the general growth of intelligence and knowledge of agricultural principles, partly by the failure and removal of bad farmers, the spread of the principles and practice of high farming seems assured.

The picture this fact calls up is a fair one. Nature has given us a country fertile and beautiful. With the general acceptance of the principles of scientific agriculture, this fertility and beauty is sure to increase till our country becomes, as it should, one fair scene of agricultural and pastoral beauty. But, more beautiful than even this, will be the effect on our people. With better methods will come greater wealth, the means towards requirements and more general education. With greater knowledge of agriculture will come an increased interest on the part of the younger generation in the profession, and the stopping of that movement which at present drains much of the best blood from the farm into other callings. A land of beauty and fertility, of beautiful homes, of refinement among the people, of contentment, of stability,—that is the picture that represents itself to us as the result of following high farming. Happy indeed are we as a people, if, as present conditions would indicate, this picture is to be, not merely a picture, but in the not distant future, a happy reality.

DOUBLING THE REVENUE OF THE FARM IN FIVE YEARS.

BY ANSON GROH, PRESTON.

The title of this address may appear over ambitious and aspiring to many; yet, if it is within reasonable reach of attainment, why ought we not to entertain the hope of its accomplishment. On many farms of this Province, such a hope cannot be entertained; but on many more it might well be. I at least know that such has been done, and I have a firm resolve that it shall be done again. In a few general statements, I shall try to make my position clear, before entering more minutely on the discussion of the ways and means required to accomplish the very desirable end of doubling the revenue of many farms within five years. But why should we take five years to do what in many cases could be done in less; or why neglect to do our best because it may take more than five years to attain our object. The real purpose of this address is not to set any limitations, but to stimulate a person to better farming.

Five years ago I inaugurated a new regime in farm practice on my farm; enthroning clover on the fields, and a dairy cow and bacon hog in the stables. A systematic rotation of farm crops was begun at the same time. The purchase of additional land since then, has affected our cash account in a way that makes it difficult to give definite figures in cash as the result of our work; but fairly definite figures are available in another form. Five years ago 62 horse loads of manure was all that was

available; this quantity steadily increased until the past season over 160 loads were produced. I consider that the manure produced on a farm is a fair index to the crops grown.

The farm purchased two years ago was practically an abandoned farm after forty years of tenant management. I will compare some of the first crops I grew on that farm, with the same on my home farm. About five times more hay, 100 bushels more than twice as many turnips, two and a half times more silage corn and two and a half times more grain per acre, has been grown on the home farm than on the other, yet any difference in the nature of the soil is much in favor of the new farm. The difference is entirely one of past management. Am I not then justified in aiming at increasing three fold the produce from that farm? I cannot believe that I own all the farms in this Province that have fallen below half or one-third of what they should produce. The revenue of a farm, however, is not by any means certainly gauged by the crops grown. There are other intricate processes through which most of our crops ought to pass before counting as revenue.

But we are too prone to be content with our own attainments and kick ourselves into a fury about conditions apparently beyond our control. The very first thing to do on many farms is to improve the prevailing conditions, is to change the man, not necessarily to remove him, but to move him to a change of purpose and plans. We should recognize that, in principle, our calling is much the same as that of many manufacturers. A miller, wishing to establish himself in business, came upon a promising stream of water. He noted the privileges and opportunities afforded by nature to supply him motive power. He constructed a strong dam in the path of this stream to retain and harness the wasting energy to his purpose, then placed a water wheel with which to turn this energy into the revolving wheels and grinding force of his mill. However, when all was ready and the grist was turned in, it was found that the ponderous, antiquated, ill-set machinery in his mill, absorbed nearly all the power that his cheap, inefficient waterwheel abstracted from the poorly husbanded stream above; and the dribbling little stream of grist coming out, cut a sorry figure in the proper reward for the investment made. This man was ready to sell at a sacrifice. Another man of engineering ability looked over the plant and bought him out. First, he looked to the supply of the stream above, and stopped all leaks, and turned the stream into his mill pond; second, he raised his mill pond to a higher level by building up the retaining banks. Thus, by saving the previously wasting supplies and getting on a higher level, with more head, he more than doubled his available power. Third, he replaced his insufficient power wheel, by one of the most effective that modern science and art can devise. Fourth, he equipped his mill with the best that would attain the object aimed at. Then, as we say, "Happy is the miller when the wheel goes round," for the grist came through full and free.

Now let us go over this manufacturing plant as it effects the farmer.

STOPPING THE LEAKS IN NATURE'S SUPPLY STREAM.

Where is the fertility of our soil going? Some to the market; some with the drainage; some to the air. The manure pile is allowed to leach into the stream of melting snow or falling rain, to decay and dissipate its substance into the air. The greatly diminished quantity is then taken to the fields and buried by a deep furrow well out of the reach of the starving

rootlets of the sprouting crops. Many farmers look for fertility to the plow, when they should look to humus and the bacteria of the clover. One such recently boasted of the great number of times and depth to which he plowed his land. When told that my land, from past experience, only expects to be plowed twice in five years, and then only from four to five inches deep, and each time a growth of clover goes down with it, he was candid enough to say, "Yes, it might be well to sow clover seed, if one only knew the season would be wet, so it would catch, but clover seed was dear stuff to lose." But for such shallow plowing he had no use at all, for "if he did not work his land better than that, he would starve, for even with good work," he said, "farming did not pay, and he could hardly make a living." Yet this man could not see over his line fence, where crops much better than his own are grown, by a system the very opposite of his; and these crops provide food for three times the number of stock per acre. Besides the wasted opportunities of conserving and adding to the fertility of the soil, we keep watching the clouds for a supply of moisture, when we should supply it by the use of cultivator and vegetable mould. And, again, in the stream that flows on to fill the mill pond, we often find a great waste, in the expensive binder twine used to bind up bundles of weeds, to take up the time of the more expensive threshing outfit. Like the wise miller we should stop all waste, and send a good steady stream down into our mill pond.

Raise the Mill-pond.

And now to the mill pond itself; has it capacity enough, is it high enough? If you expect to put the wheel in motion from the side of the straw-stack, I must strongly advise you to go up higher to clover hay. If there is nothing in the flume but wheat chaff, then fill it up with well made corn silage and roots. Do not fail to have and use a good supply of lubricant in the form of meal and bran. This will aid wonderfully in developing all the power, and preventing friction. Fill up with the best pasture, soiling crops, alfalfa and the like, thus getting a good head on the waterwheel below.

Replace the Insufficient Wheel.

Just as in many other manufacturing establishments, much power is wasted in bad machinery, so also may the farmer, even after he has grown maximum crops of the very best kinds, waste their power for profit, by having them consumed by inherently useless as well as badly cared for stock. As in manufacturing every piece of machinery set for motive power all through is set for a purpose, and should be the best available for that purpose; so in feeding the produce of our farms to animals, each animal should be kept with some definite object in view, and every animal kept should be bred, and reared with a view to attaining that object. The replacing of the insufficient wheel in animal life however, is a sort of continuous job—an unending task of selection and care. But in the task of increasing the revenue of the farm, it is an extremely important work. Prof. Grisdale of the Central Experimental Farm at Ottawa, told us at the winter fair at Guelph, that the cows of this country averaged annually less than 3,000 pounds of milk and 100 pounds of butter, whereas, individual herds were known to average over 12,000 pounds of milk and 500 pounds of butter. Is there not scope here for doubling?

Properly Equip Your Mill.

If the miller wants a bag for bran he knows just where to hang his bag, and he does not hang it where the flour comes out. Some farmers

hang up their bags for beef, and find a dairy calf inside; or they think they will grind for milk, and they get a sack of beef, or hang up the bag for a horse, and actually expect a draft horse, a racer, and a coach horse, to come out of the same spout at once. Equip the farm for something definite, and not for everything indiscriminately. You ask a man if he has a dairy, he replies, "Oh no! I have some cows and make a little butter, but I am really not a dairyman." Your reply, "You are breeding for beef then," again in a hesitating way comes, "Oh no! not particularly. I sell some butchers' animals sometimes, but you know we can't farm without some manure, and of course must keep some stock." Now manure is a good thing to have in view, but, of itself, it is hardly the thing that grinds into the grist, that makes the farmer happy; and we must aim to equip for something higher and more commutable. If we could add together all the gains that might be made at each stage of the problem of Agriculture and live stock, it is hard to guess what the sum would be.

AN INSTITUTE TRIP IN TEMISKAMING.

BY PROF. J. B. REYNOLDS, O.A.C., GUELPH.

In July, in company with Prof. Zavitz, I had the privilege of visiting the District of Temiskaming and addressing a number of Farmers' Institute meetings in several of the townships. We found the farmers there anxious and eager for information. They have met with the usual difficulties that pioneers encounter, and, besides, have a number of special problems imposed by the peculiarities of climate and soil. The meetings were well attended, and the interest throughout very gratifying. I, myself, discussed particularly the question of the climate of the district, soils, and the proper methods of cultivation. While I, undoubtedly, gave some assistance to the farmers who attended the meetings, for my own part I obtained a great deal of valuable information from them during the discussions and in private conversations. Before going there I had made a detailed study of the climatic conditions of the district, so that on that point, at least, I could speak with some authority. Also, I had the opportunity of analysing a number of soils from that district, so that I understood their general characteristics. A few observations under these headings respecting this district might not be out of place at this juncture.

The agricultural part of the district of Temiskaming commences about one hundred miles north of North Bay. Proceeding by the new government road, the Temiskaming and Northern Ontario Railway, the traveller passes through a district of forest and rock of little or no agricultural value, until the railroad approaches Lake Temiskaming. Haileybury, which is near the southern border of the good agricultural land, is on latitude $47^{\circ} 30'$. The part that has been surveyed extends about to $40^{\circ} 30'$ north, seventy miles north of Haileybury. Within this district about forty townships, each six miles square, have been surveyed, and, of these forty townships, the Crown Lands Agent at New Liskeard informed me, fully two-thirds of the land is tillable. The district borders on its eastern side the Province of Quebec.

We are accustomed to think of New Ontario as being very far north, and as possessing an extreme climate. We should remember that the centre of this district is fully 2° , about one hundred and forty miles, south of the City of Winnipeg, or $3\frac{1}{2}^{\circ}$, and about two hundred and fifty miles south

of Calgary. There is nothing in the topography or its situation to make its climate unusually severe; in fact, its climate is no more severe than other districts of the same latitude in the northern States. The mean annual temperature at Haileybury is 37.8, that at Toronto is 44.2, at Winnipeg 33. The temperature for the six hottest weeks at Haileybury is 65.3, at Toronto it is 67.3, and at Winnipeg it is 65. The mean temperature from April to October, inclusive, at Haileybury is 54, at Toronto it is 56.3, and at Winnipeg it is 52.8. The mean temperature for the winter months, November to March, inclusive, at Haileybury is 15.2, at Toronto it is 27.2, and at Winnipeg it is 5.3. On the average the number of days of the year during which the mean temperature stands above 43 is at Haileybury 172, at Toronto 188, and at Winnipeg 160. These figures, respectively, represent on the average the length of the growing season at the three points mentioned. The season at Haileybury opens about ten days later than at Toronto, at Winnipeg 14 days later.

As to precipitation, the mean annual precipitation, including rain and snow, at Haileybury is 32.3, at Toronto 31.1, and at Winnipeg 21.6. These figures indicate that in the matter of temperature, and length of season, the District of Temiskaming stands about midway between Southern Ontario and Manitoba; while, in the matter of rainfall and snowfall, the Temiskaming district stands on a par with that of Southern Ontario, and exceeds that of Manitoba by 50 per cent.: in fact, the climate of this district is in most particulars quite similar to that of Southern Ontario with only the differences that may be expected from a more northerly latitude, namely, a severer winter, a shorter growing season, and an occasional occurrence of late spring and summer frosts.

On the matter of summer frosts the settlers seem to be somewhat anxious. At present they occur frequently, and have done a considerable amount of damage to potatoes and cereal crops when occurring in July and August. While speaking at the meetings, I took occasion to assure the farmers there that if the experience in Southern Ontario could be taken as a criterion, the summer frosts would certainly lessen in frequency, and might disappear altogether. The gradual draining of the land would help in this particular, by allowing the soil to become warm earlier in the season and to store up quantities of heat that would help to prevent an undue cooling of the atmosphere. The more important factor, however, in lessening the spring and summer frosts would, undoubtedly, be the gradual clearing of the forests. A small clearing in the midst of a forest holds the same relation to the forest tops as a depression in the ground does to surrounding higher ground. On cool summer nights the frost is sure to strike the low places first, and this is what happens with the small clearing in the midst of the forest. The forest retards the action of the wind and allows the stagnation of air in the clearing, and the settling of the cold air to the lowest places, which is favorable to frost; but when clearings are widened, and openings are cut through the forest, allowing free vent of winds, such a condition of stagnation of the air will not occur, and I have no doubt that the danger from summer frosts will materially lessen as time goes on, and for the same reason the growing season will be lengthened. Crops may be sown earlier and left later without fear of damaging frosts. Such has been the experience in Southern Ontario under identically the same conditions.

In these remarks concerning the forest, I do not wish to be understood as setting myself in opposition to those who regard the forests as a beneficial condition, and who are using all their endeavours to prevent the wholesale destruction of the forests in our new districts. My position on

the question is, that from lands intended for agriculture in these northern latitudes the forests should be removed as quickly as possible. The improved conditions of the climate that result from the removal of the forests are in northern latitudes especially noteworthy. Considered merely as a condition, the forest has the following influences on climate:

- (1) In holding the snow and delaying the advance of spring.
- (2) In favouring spring and summer frosts, as explained above.
- (3) In producing a cooler summer.

These being the effects of the forests, it is obvious that in latitudes where short seasons with occasional summer frosts occur, any course that will improve conditions in these respects is to be strongly commended.

The removal of the forests from the agricultural lands in Temiskaming will not, by any means, involve complete deforestation. There are rocky ridges, ravines, and hillsides on which either the soil or the topography will make agriculture unprofitable. If a wise policy is followed, such as is recommended by the Forestry Department, such areas will be left forested, and these will be of sufficient extent to preserve to a sufficient degree the beneficial influences of the forest on the distribution of water. There is a misapprehension that the forest has an influence on the amount of precipitation, rain and snow. Authorities now generally agree that, as a matter of experiment, the influence of the forest on the amount of rainfall and snowfall is undetermined: and, as a matter of theory, the influence of the forest in temperate latitudes is not in the direction of greater precipitation. While this is true, the effect of the forest in controlling the precipitation after it reaches the ground, and becomes ground-water, is of immense importance. The forest itself, as well as the forest floor, prevents the denuding of the hillsides, the occurrence of destructive freshets in the spring or after heavy rains, and the exhaustion of the ground-water in the summer. This influence is of very first importance, especially in hilly or mountainous regions, and for this influence alone the agitation that has been raised latterly concerning the preservation of the forest is justified: but for the district of Temiskaming, and, in fact, for all agricultural lands through New Ontario, the other influences of the forest are detrimental to agriculture, and the amount of forest that will remain after the agricultural lands are cleared will, I think, be sufficient to serve all the beneficial effects of the forest, and, at the same time, will not be extensive enough to retard the spring or encourage summer frosts. The best thing that can be done, therefore, for New Ontario, is to clear the arable lands as early as possible.

I observed, during my trip through the district of Temiskaming, that there are many inducements which prevent the rapid clearing of the land. This district is not solely an agricultural district. The famous Cobalt region is within a short distance of the agricultural land of Temiskaming: lumbering is a very important industry there as yet; and the new railroad that is being constructed requires large numbers of hands. The mining, lumbering, and railroad industries combined offer inducements for employment that at present are distracting the attention of the settlers from their main business. The result is that the land is being cleared very slowly. It is needless to say that these distracting occupations, however profitable they may be in the meantime, are unfavorable to the development of agriculture in the New Ontario districts by delaying the clearing of the land, and the proper cultivation of the soil. At the same time, the opportunities for employment afforded by these industries make it possible for many to pay their way by engaging in one or other of them. The presence of such large numbers of workers through the districts creates a brisk de-

mand for local products at good prices, so that from the very first the farmer can realize profitably from his crops. Temiskaming is the place for the young man with little means, lots of pluck, energy, and physical strength. If he takes the occupation of farming seriously, clears the land as soon as possible, and tills it properly, he need not long depend upon other industries for a livelihood.

THE SELECTION AND BREEDING OF DAIRY CATTLE.

By D. DRUMMOND, OTTAWA, ONT.

Live stock of any kind should be an interesting subject to any farmer, when we consider that about four-fifths of the crops produced on the farms in Canada are fed to live stock of some description. A very large amount of this food, however, is fed to inferior and unprofitable stock. No good farmer, who, by his industry and intelligence has produced better crops, built better buildings and fences, will be long satisfied with inferior stock. There is, probably, no subject that has been more discussed by the agricultural press, and more persistently brought to their readers' attention, than the improvement of live stock, and, yet, improvement has been slow, not because the farmers do not value improved stock, but many are deterred by the fear that so called "fine or fancy stock" requires larger expenditures of money and care than the average farmer can devote to it. Besides the mere satisfaction of being surrounded by animals of an attractive appearance, the most successful managers of farms find that it pays to grade up their farm stock to a point where it will be beyond the great host of scrubs that are a drug in every market.

The improvement of our live stock by selection, breeding, and feeding is not the work of the ignorant and incompetent, it is the work of the conscientious, patient, and studious. It is in the interest of every farmer to learn all he can about the class of stock he desires to handle, the more thorough his knowledge and judgment the greater his chance of success.

The real foundation of the dairy business is "the man in front of the cow." He should be equipped with knowledge and understanding concerning his share of the work, so that he can make the greatest profit possible from the amount of feed consumed by his stock. The real and most serious expense in the dairy business lies at the farm end. There seems to be a lack of knowledge and study concerning the best economy in the production of milk, the best kind of cows suitable to the locality and capable of producing milk at the lowest cost per hundred pounds, the right methods of field and stable management and feeding. All these points require careful study and good judgment, therefore, a great deal depends on the man. The power of heredity is just as strong in the man as in the animals. Where you find a man whose parents and grandparents have been lovers of good stock and learned to care for them, in most cases you will find a man who is alive to all improved methods, and is in the foremost ranks of stock breeders.

We see on all sides the marked advance that has been made in recent years in perfecting the methods of manufacturing dairy products, and in improving the facilities of transportation and marketing. By reason of improvements in methods and appliances the cow is a much less important factor in determining the quality of the product than formerly, provided

the milk is obtained in a wholesome condition. But, in computing the profit and loss we are compelled to reckon with the cow, first, last and all the time.

The men who make the greatest success in any business always use the implements or machines suited to their business. The farmer who makes milk production his business must use dairy cows that will produce milk at the lowest cost per 100 pounds. The cow is part of the equipment of a farm for the purpose of converting the forage and other foods into milk. The selection of the most suitable cows is, therefore, an essential point on a dairy farm.

Acquired characteristics, such as the milking qualities of the dairy cow, which has been developed under favourable conditions, best of care, and abundant food, are only to a small extent hereditary or fixed: the same care, abundance of feed, and favourable surroundings must be continued if it is desired to maintain these acquired characteristics. Remove these highly developed animals and place them under less favourable conditions, and their offspring will not be much, if any better, than the scrub. Proof of this can be easily seen by any observant person in this country. There is hardly any district into which the so-called improved breeds have not at some time or other been introduced: but, owing to insufficient feed and want of care, the offspring from these improved breeds has deteriorated to such an extent, that to-day, in many places, it is no better than before the introduction of the better blood.

Unfavourable conditions mean deterioration. As learning to read is the primary step towards a university education, so learning to feed is the first step towards becoming a successful dairyman and breeder.

The object of breeding and selection is not to develop a class of cattle that will withstand rough treatment and scanty fare, but it is to develop animals which will make the greatest possible profit when given liberal feeding and kind treatment. It is of little use to introduce better blood into a herd unless the owner is prepared to give them the same, or similar conditions of feed and treatment that were used in the development of the breed which he has decided to make his choice.

Feed the calf, feed the heifer, feed the bull, feed the cow when in milk, when dry. It is not with any intention to detract from the benefits to be derived from better breeding that so much is said about feeding, but to warn against that too prevalent idea that breed will accomplish all without feeding. It has been our experience that the man who has learned the principles of better feeding, and adopted them, very soon learns how to improve by better breeding and selection. There is no intelligent dairyman does not know that a very large percentage of the cows in this country are not producing to their fullest capacity, and that because of the fact that they are insufficiently fed; therefore, to intelligently carry out the selection and breeding of a dairy herd, how to feed, in my opinion, is the first lesson to be studied.

Selecting the Females for a Dairy Herd.

For a farmer who has sufficient cows to stock his farm, selection should be made by weighing and testing the milk from each cow for the year. A cow has to be fed a year, and her returns are the milk she produces in that time. Therefore, do not be satisfied with a short test. It would seem that no argument should be required to convince any man of the folly of keeping cows that do not pay in milk for the food consumed. We know the difficulty of keeping an exact account of the food consumed, but any careful and observant feeder can estimate it very closely. The entire

cost of keeping the records of the amount of milk produced by each cow for a year need not exceed \$1.00. By continuing to keep these records, the farmer will soon know which of his cows are "boarders," and which pay for their feed. The latter kind should be kept to form the foundation from which to build up an improved herd.

As an illustration of the necessity of weighing and testing the milk from each individual of the herd, allow me to quote from the St. Louis Cow Demonstration:

120 DAY TRIAL, ST. LOUIS.

	Cost of food.	Profit above Cost of food.
Best Jersey	\$31 99	\$50 50
Poorest Jersey	30 23	26 70
Difference	\$1 76	\$23 80
Best Holstein	\$36 57	\$46 02
Poorest Holstein	34 68	18 03
Difference	\$1 89	\$27 99
Best Shorthorn	\$28 57	\$32 56
Poorest Shorthorn	27 69	1 95
Difference	\$88	\$30 61
Best Brown Swiss	\$33 49	\$27 77
Poorest Brown Swiss	32 21	19 75
Difference	\$1 28	\$8 02

Here we see that cows which were carefully selected beforehand and fed as well as was known how show a considerable difference in the amount of product between the best and poorest of each herd, and very little difference in the amount of feed consumed. Surely this should demonstrate to us the need of careful selection for our foundation stock. This question of individual testing of our cows is, I believe, at present, the greatest educational factor the dairyman has towards improvement. We hope it will not be long before there will be some kind of a testing society formed in connection with each cheese and butter factory in the country. We have no hesitation in saying that it would be not only an aid to profitable production, but also be a help to improvement and better breeding and selection of the dairy cattle.

Selection for Improvement.

In grading up a herd one must decide upon the breed he intends to make his ideal. That breed which has been developed under conditions most resembling those which he is prepared to give them will be the breed that will do the best with him. Some of the conditions referred to are soil and character of the farm, whether hilly or level, whether intended for summer or grazing dairying, or winter or stall-feeding dairying, and, also, climatic conditions of the district.

To arrive at a satisfactory decision it will be necessary to study some of the breeds and the peculiarities of the country in which they were devel-

oped, such as their environment, nature and quantity of food, manner of handling, climatic conditions, etc. There may be some other conditions to be taken into consideration, such as previous knowledge and acquaintance with the breed, the market to which we intend to cater, etc. When we have studied carefully our conditions and circumstances, select the breed which has been decided as being most suitable, and stick to it. Stay by the choice, and do not change with every wind that blows. Then comes the most difficult and at the same time most important step towards improvement.

Choice of Sire.

The old saying that "the bull is half the herd" is not the whole truth. He is, and he is not, according to the strength with which he transmits the qualities of the breed of which he is a representative. A bull is not half the herd if the cows, to which he is mated, have stronger prepotency and transmit their qualities with greater intensity than he does.

A pure-bred sire ought to exert by far the greater influence on the progeny, and is then more than half the herd.

In improvement it has been said that the females should be depended upon to maintain the standard reached, but any raising of the standard must come through the male. Especially is this the case with grade females.

For these reasons great care should be exercised in the selection of the male. The practise of buying a calf or yearling and selling after a short service has worked much injury to our breeding interests. By selecting more carefully, and after excellence is proven, keeping as long as possible, one-half of the bulls should be dispensed with, and the remainder maintain a much higher standard of quality. Many bulls are destroyed before their qualities are known, and, if good, there is no chance to duplicate their good work, and, if bad, the mischief is already done. Pedigree should count, but the value of pedigree depends mostly upon the character of immediate ancestors. Excellence in remote ancestors, however desirable, must not be allowed to cover up deficiencies in parents or grandparents.

Particular attention should be paid to the performance of the dam and grand-dam, and all the females as far back as we can get records of them.

He must be a good individual, conforming as near as possible to what is recognized as correct dairy type. This, of course, should include what is called dairy temperament, an indescribable (to me at least), something within the bull, a sort of moral force or intellect.

Try to select him of a clear, determined dairy type, full of nervous energy and masculinity, so that he may be able to overcome and control the female currents with which he is to be coupled, and thus stamp his progeny with the qualities of his ancestry. Another reason for good individuality lies in the well-known fact that by breeding together a good male and female we intensify their excellencies or deficiencies, as the case may be. If, by breeding two good individuals together, we get an inferior offspring, it is very likely a case of intensifying deficiencies, or a case of reversion to an undesirable form or to some undesirable ancestor. This kind of animal, although, as we call it, well bred by pedigree, would not likely be a desirable sire, because he would have the tendency to produce a large percentage of animals of the type to which he has reverted. There have been exceptions to this, but what we desire is to impress upon the farmers the necessity of individual merit as well as pedigree. Some attention may also be paid, in selection, to correct some of the defects in

the females. In selecting to correct any defects, do not overlook any defects in the males, because these defects are as likely to be transmitted as are any excellencies of either parent.

Always select the sire from the same breed from which the former sire was selected. If the first was a Holstein, or an Ayrshire, or Jersey, he should not break up the line, and make a rope of sand of it; by the wise selection of sires of the same breed the breeder will deepen the line of dairy heredity, and that is what he is after.

Selection in Progeny.

Weeds come. Breed together the best animals, all will not be of high quality. Old breeders know this, and are prepared. Beginners are discouraged and dismayed, and know not what to do, lose heart and give up the business. Do not be discouraged. When improvement is undertaken variations begin. Without variation we could not have improvement. Better individuals are selected with the hope of improvement. With these matings come increased variation. Some individuals are superior and some inferior. Constant and rigorous selection is, therefore, necessary. In selecting the heifer calves preference should be given to those that most resemble that breed of which the sire is a representative. It is generally a proof that the sire has been most prepotent, and that the calf is more likely to be an improvement on the dam. If it is a degenerate there is no surety, or even a probability, that it can reproduce the qualities of its ancestry. It is a weed, and should be killed and not nursed and cared for in the hope of it being a good breeder. Small, weak calves are undesirable. Any calf that is not able to get up and suck its dam, if given the opportunity, is not a very desirable one. They should also be examined when young to see if teats and udder are all right. However, do not forget the advice given at first: feed the calf; feed the heifer; especially during the first period of pregnancy; feed the cow; care for the bull; keep him, if good, as long as possible; and continue rigorous selection of the cow by weighing and testing the milk.

HOW TO IMPROVE OUR LIVE STOCK THEIR CARE AND FEEDING.

BY A. C. HALLMAN, NEW DUNDEE.

This is a very wide and important subject and we shall touch on only the most important points at this time. It is well and truly said that "Agriculture is the backbone of the country," so let us add another greater truism, namely, "that live stock is the backbone of successful Agriculture." It is very essential in all pursuits in life in order to be successful to have a well defined and clear idea of what we are about to undertake and then make a strong effort to reach the mark. We should not flinch at the first disappointment, but try and try again, and if our plans are well and carefully worked out success is sure to follow. When we set about to improve our live stock, we are undertaking a very important work and we must have an aim or object in view, else we cannot expect to improve; and while we are attempting to improve our live stock, if we do it intelligently, we shall at the same time improve our farms. The great aim and object, especially in the older parts of the Dominion, should be to improve the character of our soil and regain the fertility which has been lost under the old methods

of farming. Our fore-fathers were obliged to dispose of their grain crop in order to secure cash; but these things have happily changed and the present generation has a great advantage over the pioneer farmer. Everything sold off the farm to-day brings ready cash, and everything sold should be sold as the farmer's finished product, such as butter, cheese, bacon hog, beef animals, or whatever the farmer produces. This is the only way of getting the highest prices for our raw material, and at the same time it enables us to keep up the fertility of the soil.

Improve our live stock—What does it really mean? Is it merely to perpetuate the species? Wild animals do this. It means that we must improve on the original. In discussing this subject, I expect to address the average farmer, not the breeder of pure-breeds; however, what I say will apply to him with equal force. The principles that we are about to discuss will apply to all kinds of stock.

It is not an absolute necessity that a farmer or beginner should invest in pure-breeds; except in males. This, however, I consider of such importance, that nobody is considering his best interests unless he uses pure-bred sires only, in fact no one should be allowed to use anything else. I will not discuss breeds. We have the various breeds of cattle in this country suited for different purposes, and it is every one's privilege to consider this matter for himself. We have the beef breeds and if we expect to attain the highest degree of perfection we must choose one or another of these breeds.

The first requisite is to get a good male, and the best is none too good. Here is where experience and intelligence count. We must find in that animal what we think is lacking in our herds or flocks. He must be especially strong where our females are weak. We often hear the remark that like begets like. This is not always true, as it depends upon the strength or pre-potent powers of the ancestors. We have seen great disappointments right along this line. Sometimes there seems a perfect blending in the mating of two animals and yet the male proves a failure in impressing his good qualities on his offspring. We must examine the breeding as well as the individual. There may have been very defective animals in the ancestry or remote ancestors. In breeding we are merely reproducing the ancestors, be they good or bad. Let me make this a little plainer for it is of very great importance. You will pardon me if I refer to the human family. We often find in the same family a great variety of form and features; some tall and slender, others short and stout, some fair, others dark, different color of eyes and hair, etc., all from the same parents. Some resemble the grandfather, others the grandmother, or some uncle or aunt or some distant relative more than they resemble their immediate parents; although there is always a family resemblance. Now why is all this diversity of type, etc.? We forget that the child has thousands of ancestors. If we have a broken lineage in type in breeding of animals we cannot expect to attain good results always. We must have the same type of animals for generations in order to get an impressive sire.

If we breed dairy cattle and expect satisfactory results, we must select our males from large producing cows, where the ancestors have been large producers for generations. Where these qualities are fixed with an unbroken lineage then we may say "like begets like." We must not mix breeds; select your breed and be sure it is the right breed for your purpose. Then stay with it. By selecting good males and using only the best females from the best dams, a person in a very short time will improve his herd in such a way, that for uniformity of type or color it is hard to detect them from pure breeds. Now we have merely introduced the most important points, but

there is much more we haven't time to enlarge upon. We haven't touched on the breeding of pure-breds or cross-breeding; we have discussed the grading up of a herd.

The care and breeding is of equal importance, and unless this is intelligently looked after all other efforts are in vain. We must aim to have the youngster come healthy and in good condition. We want a combination of constitution and quality. The young animal must never lose any time, but we must also always consider the cost of production. The ration must be nutritious but not too expensive: Sweet milk is too expensive for the average farmer to raise his calves on. Skim, or separator milk, contains nearly all the desirable solids required in the raising of calves after they are three weeks old: If other feeds are added, as bran, oilcake, oats, (whole or chopped) with good sweet clover hay, roots and ensilage to substitute the butter fat, which is too expensive to feed to calves when it is worth from 12 to 25 cents a pound. We must always consider that the carcass should be worth more than the food consumed. Plenty of succulent food should always be provided to assist in making the bulky foods or rough foods more valuable.

Good, warm, well ventilated stables, kept nice and clean with plenty of pure water together with regularity in feeding, kindness in handling and an abundance of good nutritious wholesome food are all essentials in the improving of our stock.

PRODUCTION AND CARE OF CREAM FOR CREAMERIES.

COMPILED FROM INFORMATION RECEIVED FROM SEVERAL SOURCES.

It is admitted on all sides that the standard of our Canadian butter is not as high as it should be, although there has been a steady and marked improvement during the past few years. When we consider that it is only our best butter that is exported to Great Britain, and that, of this our best, a large percentage is inferior in quality to that of our Danish and other competitors, we see that, as a whole, we have a great deal of leeway to make up. We should closely copy the strenuous efforts made by the Danes, Australians, New Zealanders, and even Russians to capture the British market, and make our product so evenly fine in quality that the demand at a high price will be always equal to the supply. This can only be attained by the joint co-operation of patron, buttermaker, and all others concerned.

The Patrons' Obligations. The importance of every patron who supplies a creamery with cream, sending his cream in the very best possible condition, can be immediately realized when we see that one patron by his neglect of proper precautions can injure the quality of the butter produced at the creamery and reduce the value of the whole output. This injury sometimes amounts to more than one cent a lb. Buttermakers cannot make first-class butter out of thin, sour, over-ripe, improperly cooled or tainted cream, or from cream shipped to the creamery in dirty, rusty, or unsuitable cans. If the patron could once be brought to realize what an important factor he is in the production of good butter and how the care he exercises over the cream while in his charge affects the price he will receive for his product, we shall soon see a marvellous change in methods, resulting in vastly increased profits to the dairymen of Canada.

Care of the Cow. It has been well said that the care of the infant should begin before it is born. In the same way, the care of cream should commence before it is produced. In the first place we should have the best dairy cows obtainable—cows that will give not less than 6,000 lbs. of milk during the year, of a quality to make at least 250 lbs. of butter. This should be the minimum that we should aim at. Then the feed must be good and suitable. Nothing can excel good pasture in summer, and when pastures get short, they must be supplemented by green fodder, or, when available, the contents of a silo filled for use in summer. It has been found that about 20 lbs. of corn silage and two to four lbs. of bran or chopped oats will maintain the milk flow when pastures are bare. In winter a ration of 35 lbs. of corn ensilage, 8 to 10 lbs. of clover hay, 20 to 30 lbs. of mangels, 4 lbs. of bran, 3 lbs. of oats, and 1 to 2 lbs. of oil cake daily is as perfect a ration for dairy cows in milk as can be found. These figures give a margin for the varying appetites of each cow. Cutting the hay, pulping the mangels and mixing with the silage a few hours before feeding makes the ration more palatable to the stock. Of the meal it requires about 8 lbs. of the mixture given above for each lb. of butter fat in the milk. Turnips, turnip tops, rape, apples, and any food liable to taint the milk must not be fed. The water supplied, whether in field or in stable, must always be pure and fresh, and access to swampy and stagnant pools and ponds should be prevented.

Having obtained the best cows available and fed them as described, it is requisite that they be treated as kindly as possible. Some of the best milkers are of an extremely nervous temperament, therefore, rough treatment, harsh language, chasing by dogs and anything else that is liable to excite them can only result in decreasing the supply of milk and butter. Milking should always be done at regular hours. The stables and cows must be kept as clean as possible and the former well ventilated to remove all odors. Where cows are milked in the stable in the summer time, the stables should be darkened as much as possible to keep out flies. Milking should not be proceeded with until the udder and under parts of the cow have been carefully brushed and wiped off with a damp cloth to remove straws, dirt and hairs that would otherwise fall into the milk pail. If the teats have become dirty, wash off well, and dry before milking, which should be done quickly and thoroughly as possible (as this promotes the secretion of milk) and with dry hands. Wetting the hands with milk is most objectionable. When the teats are dry and sore, a little vaseline may be rubbed on the hands with benefit to the teats. As soon as the milk is all drawn off, remove it to a clean place remote from all bad odors (preferably a room set apart as a dairy room), and strain it thoroughly through two or three thicknesses of cheese cloth, as this will catch any fine dirt and sediment far better than a wire strainer. Set your milk or run it through the separator with as little delay as possible. Where the practice of shipping the whole milk to the creamery for separation is carried on, the milk should be cooled off as soon as possible to about 55 degrees F., and as low as 50 degrees F., when it is kept over Sunday. This is easily effected by the use of cool, spring water, where this available, occasionally changing the well water in which the milk can be placed, or best of all by the use of ice.

Methods of Creaming. Where the cream is skimmed off on the farm, the three principal methods are the use of the shallow pans, deep cans, and the hand or power separator. The first method is used where only a few cows are kept, but is not recommended in hot weather, because the cream frequently sours before being skimmed. It is, however, feasible where the temperature of the milk room or cellar can be kept below 60 degrees F.

The milk should not be kept near a wall or in a strong draught, for this causes the cream to become leathery. The cream should be skimmed before the milk thickens, being first loosened from the edges of the pan by running a thin bladed knife around it. The pan is then lifted to the edge of the cream can and tilted sufficiently to allow the edge of the pan to be slightly moistened with skim milk; then, with the aid of the knife, the cream can be quickly slid into the cream can. This obviates the use of a perforated skimmer, which wastes the butter fat.

Deep cans or creamers are placed in cold water or iced water to the depth of the milk they contain, and the temperature is kept as near 45 degrees as possible. Some of these cans have taps by which the skim milk is drawn off, a glass in the side of the can near the tap showing when the skim milk is all removed. Where the cans are without taps a funnel shaped dipper, with a long straight handle and no wire around the rim, is used. The cream is loosened from the sides of the can by the knife, as in the shallow pans, the dipper slightly moistened with water or milk and lowered point first into the can, which allows the cream to flow evenly into the dipper. The dipper is inserted until all the cream is removed. Twenty-four hours is the shortest period that milk should set before being skimmed, and in winter 36 hours is better. The longer it is possible to let it set without becoming sour the better the percentage of butter fat in the cream. Twelve hours difference has been found to result in a gain of fully 4 per cent. in butter fat in favor of the longer setting.

Separators are Economical and Labor-Saving. To the farmer, however, who has six cows or more, the most satisfactory method of skimming is by the use of a good hand or power separator. While the initial cost may be thought to be high, it will soon pay for itself because there will be practically no butter fat left in the skim milk; a better and higher testing quality of cream, and consequently of butter obtained; the cost of various utensils and the labor in washing the same is saved; and as the separating is done at once after milking, the skim milk is always fresh and sweet for feeding calves and pigs. It is calculated that a separator means an increase of revenue from a cow of from \$5 to \$10 a year according to her milk flow. The dairyman with only six cows would thus soon have his separator paid for. As regards capacity, one of 450 lbs. an hour is sufficient for 10 cows. Select one with a capacity slightly greater than is really required, because by closing the feed tap a little and running the separator below its capacity, it does closer skimming and produces richer cream. The speed should be uniform and a little faster than stated in the instructions furnished by the manufacturers. In tests made, an extra speed of 5 revolutions a minute has caused an increase of butter fat in the cream to the extent of 6 per cent. The cream should test from 25 to 35 per cent, because the higher the quality of the cream the better the butter. Immediately after separation the can should be set in cold water and the cream stirred until its temperature is about 50 degrees. A fresh lot of cream should not be added to that previously separated until the new has been cooled down to at least 60 degrees.

The use of preservatives should be strongly discouraged, as not only are they injurious to the cream, but they are absolutely unnecessary where proper conditions of dairying are carried out.

After the cream is all separated, the bowl of the separator should be washed at once, the slime that has collected burned, and all parts washed, scalded, and dried in the sunlight and air. Thorough cleansing must be carried out every time the separator is used, otherwise the cream will acquire a bad flavor.

Delivering the Cream. To ensure the making of first-class butter, cream should be delivered at the creamery not less than three times a week. There is no doubt that the system of individual cans is the best for delivery. Next comes jacketed cans, then ordinary cream cans, ordinary milk cans, and last of all tanks.

As the methods of collecting cream, as practiced in many places, are undesirable, these could and should be vastly improved on at the earliest possible moment. With regard to the testing of cream at creameries, there is a prevalent idea in some localities that the oil test is a fairer one than the Babcock Test. As a matter of fact, the latter is much the fairer and better, and should be the only one used in a creamery.

The Dairymen's Association and the Department of Agriculture co-operate in sending out a number of Instructors who make periodical visits to factories and creameries, as well as call upon dairy farmers, for the purpose of instructing makers and producers as to the best methods of taking care of cream and milk and manufacturing the same into cheese and butter. Their usefulness has been largely curtailed in some instances owing to a mistaken idea that has gone abroad that their chief duty is to seek evidence to prosecute patrons for neglect and improper methods of handling milk. It is only necessary to mention the real object of their visits in order to secure them a welcome everywhere.

SHEEP MANAGEMENT.

By W. S. FRASER, BRADFORD, ONT.

The keeping of sheep, which dates back as far as the time of our first parents, is an industry with which many beautiful thoughts and experiences of uncommon interest are associated. Modern methods have less romance about them and less of intimate association between the shepherd and sheep and more, perhaps, of the mercenary spirit pervading the business than in the days of our great ancestors.

Many debate the question to-day as to whether or not sheep pay, and, from the decrease in the number of sheep kept during the past fifteen years, one may reasonably conclude that, with the majority of people, the conclusion arrived at is that they do not pay. During the last two years many who had abandoned the keeping of sheep are again making a start, and to-day they are looked upon as money-makers.

We have many different breeds of sheep in Ontario, which are usually divided into long-wooled or white-faced, and short-wooled and black-faced. The first are represented by the Cotswold, Lincoln and Leicester, the second by Southdown, Shropshires, Hampshires and Oxford. Each kind has its peculiar features in form, color and fleece, and the treatment for one kind of sheep is suitable for all.

In starting a flock each man should choose the breed that he thinks will suit him best, and then try to improve it, and, by proper treatment and not mating his young ewes until they are shearlings, he will find his flock yearly improving in quality, and will also be satisfied that the idea held by some, that sheep run out if kept on the same farm for a number of years, is a delusion.

In summer, sheep should have a variety of pasture, as changing from one part of the farm to another gives them opportunity to crop many plants that are not eaten by other stock, many of which are noxious weeds. An

occasional run on the highway is beneficial, but they should not be left long enough to become familiar with passing teams, as they soon grow indifferent to their approach, and are in danger of being injured.

During the mating season sheep should be kept in good pasture; a field of rape or turnips or young clover, during part of the day, is good. The number of lambs is largely increased by having the ewes in a fleshy condition as compared with flocks in a low condition. Some people are in the habit of using a neighbor's ram that is in a run-down condition; the result is usually a small crop of lambs.

In winter sheep require less attention than any of our farm animals, and, for this reason, they are often neglected. They need dry and well ventilated apartments, not too warm, and protected from the rain and snow. A temperature suitable for cows and horses is entirely too warm for sheep. A shed open to the south, with a yard, answers well. They should be fed in racks having upright rungs with a trough for grain and roots in the bottom.

Their food in winter may consist chiefly of clean pea-straw (if flail-threshed all the better), bean-straw and clover-hay, with a limited quantity of roots, and a little grain. They should be fed regularly, and have a plentiful supply of water and salt. This, with kind treatment, is all that is necessary to bring a flock through the winter in good condition. If this is compared with the housing, food and labor necessary to properly winter horses, cattle or swine, the difference is largely in favor of sheep.

There are two sources of profit from sheep, namely, the wool and the increase of the flock. The price of wool has been low for some years, largely owing to the quantity of shoddy used by the manufacturer, but the price of lambs is higher than ever before.

The farmer should give special attention to raising lambs and fitting them for market. The market in March or early April, when lambs weighing 40 pounds and over will bring \$4 to \$8 each, is one that it pays to cater to. Have the lambs come in February or early March, keep them in a warm place, feeding the ewes liberally, place some chopped oats in a box to which the lambs can have access, and they will be ready for the market in five or six weeks.

The early June market is sometimes a profitable time to market half-grown wether lambs, and October and November, also, when lambs are more mature, and when many are buying for winter feeding. Winter-fed lambs, which are grain fed, usually pay well, selling this season as high as 6 and 7 cents per lb., live weight. No farmer should be satisfied with his success in lamb raising unless he succeeds in raising $1\frac{1}{2}$ lambs per ewe kept, and some exceed this. Thus we have 150 per cent. increase in flock.

A flock of 20 sheep should raise 30 lambs, out of which we should select say six of the best ewes for keeping up the flock. We have 24 to dispose of, averaging \$3 to \$3.50 each, 6 old ones for sale at \$5 each, plus the wool at \$1 per fleece, making in all \$120.

During the lambing time the flock should receive close attention. This is specially true if the weather be cold. Chilled lambs should be taken to the fire and wrapped in a warm cloth, after a warm bath, and given $\frac{1}{2}$ teaspoonful of whiskey in warm milk, slightly sweetened, and a little water added. This usually gets them on their feet in a couple of hours, when they should be returned to their dam and helped to get a drink. Sometimes a sheep refuses to mother one of her lambs when there are two. In this case the sheep should be held for a few times, when she usually ceases to be partial. If she still continues to resist, tie her with her head between

two upright boards about ten inches wide, and a foot apart, put a strap about her neck, and tie with a rope to both sides. In this position she can feed and lie down, but cannot see which lamb is drinking, and, after a few days of this treatment, she will take kindly to both lambs. Lambs' tails should be docked when a few days old. Ram lambs should be castrated when two weeks old. Lambs should be weaned at about four months old.

Rape sown in spring with oats or barley at the rate of 2 lbs. to the acre will afford good fall pasture, and hasten the development of the lambs, and also fit up many old ewes that are intended for sale or home use. Old ewes, when moderately fat, furnish meat second to none for the farmer's table. This is especially true of the black-faced or mutton breeds.

One reason why mutton is not esteemed as highly as it should be by the public is that many of the large white-faced sheep which are very fat and not fit for eating are sold. Mutton, as a whole, is judged by this class, and, as a consequence, mutton is not used as much as it deserves to be.

It is very important that ticks should be destroyed, as no sheep can thrive if these abound. There are different ways of killing these ticks, there being several good tick dips in the market with full directions for using.

Dogs are a great menace to the keeping of sheep. Useless curs cost the country more money than we are aware. A flock that has once been worried by dogs never does well after, as they are in constant dread. If a dog barks within half a mile they cease feeding, and round up, fearing an attack. Some use a number of bells on their flock as a preventative against dogs. Sheep should come to the barn at night. This they will undoubtedly do, if they have a chance.

Sheep should not be kept after they are six years old. Their teeth become loose and drop out, and they cannot thrive in consequence. Old sheep are more easily fattened on rape or clover than if fed in the winter time.

The causes of loss in sheep raising may be summed up as follows:—

- (1) Low condition of flocks at mating time.
- (2) Insufficient food and shelter during winter.
- (3) Neglect during lambing time.
- (4) Worrying by dogs.
- (5) Selling the best lambs and keeping the culls.
- (6) Using inferior rams.
- (7) Neglecting to destroy the ticks.

THE PRODUCTION AND CARE OF HIGH CLASS SEED CORN.

BY LEONARD H. NEWMAN, B.S.A., SEED DIVISION, OTTAWA.

Regarding the question of corn, I think we are all agreed that the time is ripe when some steps should be taken to place this crop on a higher basis, and to remove the element of uncertainty which at present is connected with it. In the first place, we all realize the presence of certain facts in connection with the crop. These might be enumerated as follows, viz.:

1st, the difficulty, especially of late years, in getting seed of good vitality.

2nd, the difficulties attendant with the fact that our variety names are decidedly local, numerous, and changeable.

These facts, together with the inherent capacity to vary possessed by this great cereal, make the field open for improvement extremely fertile. That we have by no means approached the maximum in yield is apparent to all who have looked into the conditions of things as they now exist. Furthermore, the acreage under corn might, and should, be largely increased. In the year 1904 the acreage under corn was much reduced below that of the years previous, as was also the average yield per acre. Why is this? For a satisfactory determination of this question we have not far to go, and we may say that such conditions were anticipated on account of the prevalence of large quantities of poor seed in the spring of the same year. A great deal of corn was examined by myself, both throughout the country and at the Seed Laboratory, with the result that the gravest apprehensions were held as to the ultimate outcome. Therefore, as we have already mentioned, the resulting crop proved to be such as we had expected to find. In the case of husking corn the condition was not so bad; and why? Simply because the seed for corn to be grown for the production of grain is, in the majority of cases, home grown, and, as a consequence, the grower not only knows what he is growing, but knows how it has been stored throughout the winter. In the case of silage corn, however, things are somewhat different, taking the Province as a whole, since large areas of the deeperkerneled strains are grown for silage purposes in districts where they will not reach a sufficiently advanced stage of maturity to be used for seeding. As a consequence, this corn is purchased from outside points, and, were we to trace up the method by which this has been selected, we would find in many cases that the scoop shovel system had largely been the one practiced.

This, then, is one of the phases of the corn improvement effort that I wish to emphasize, viz., the creating of a reliable source of seed corn in such places where it can be thoroughly matured and supplied in the ear to our more unfortunate brother farmers in the north and east, who, at present, have to trust to the mercies of others, which is practically equivalent to trusting to luck. Experiments have proven, beyond a doubt, that it does not pay to import seed corn for general use. In the United States they have found that it is bad practice to import, into one state, corn produced in another. How much worse, then, is the practice of bringing seed corn from across the borders to plant in the northern and eastern parts of our own province, and, yet, this is exactly what is being done to a very considerable extent. Furthermore, we can grow just as good, if not a better quality of corn, and corn which is entirely suitable to send north, as far as necessary for silage purposes, right here in our Lake Erie counties, and I may say that I have had the pleasure of proving this myself by personal inspection. Now, the average farmer in the northern and eastern sections who grows silage corn is willing to pay for a superior article, and one that he knows will grow and reach a stage sufficiently advanced for his purpose, but he does not want, and will not pay the price for something about which he knows nothing, and of which he may have just cause for concern. It is, therefore, evident that there is a demand for high-class seed, and it is our business, as an association, to see that the demand be supplied. This demand opens up a profitable market for the prospective corn grower who will produce this seed under certain regulations such as are laid down by the Canadian Seed Growers' Association, which association claims not only to supply a public demand, but to make the supplying of that demand a profitable undertaking to him who would attempt it.

This, however, although an important one, is only one phase of the subject, for our aim is to deal with the question of corn improvement from

the standpoint of what it will mean to the grower himself on his own farm.

It may be said that we are just now in the wake of a great wave of awakened interest in corn improvement which, partly for reasons already mentioned, is sweeping over the Province at the present time.

Until very recently no systematic attempt has been made towards improving our various strains of corn, and, as a consequence, we are growing mostly mongrel or scrub and intermixed varieties, thus exposing the great possibilities open to those who will overcome this difficulty, and will endeavor to create pure-bred material. We would, therefore, say to the prospective corn breeder: "Do not send away to another locality unless you can get well-bred material." The best variety for any locality is the one which has received the most intelligent and persistent care in the selection of seed during the last few generations. The key note of the whole situation might be given in the one sentence, viz.: Adopt a variety which will yield the most readily to your attempt to produce a pure-bred type which will give the greatest amount of milk or beef per acre.

In coming to the question of how we are to procure this seed we reach the stage of most vital importance connected with the whole problem. Space will not permit us to deal with the question of cultivation, although it is an extremely important one, hence I shall limit myself strictly to the seed part of the question. In this connection I may say that the points of importance upon which the success or failure in the work of improvement are based are legion, and, yet, how few of us have thought along the lines of breeding, corn being looked upon as a crop with which we have always been familiar, and one about which we thought we knew everything worth knowing.

It is said that "familiarity breeds contempt," and in the case of corn there is no exception, for this very idea which we have cherished in the past, viz., that we knew everything worth knowing about this crop, has resulted, to a certain degree, in our disregard for its improvement.

The methods of corn breeding and improvement are so simple, yet, withal, so scientific and practical, that they must needs appeal to all concerned, and we are surprised at the fact that so little has been done along these lines in the past. In speaking of the breeding of corn we do not mean the artificial mating of two different plants, but rather the selecting of the product of a natural cross, the selection to be based on certain desirable characteristics which I shall endeavor to explain later.

The Common Method of Selection and its Faults. Most progressive corn growers have been in the habit of giving the choice of seed a good deal of attention, but when one takes into consideration the peculiarities of the plant he is dealing with, it will appear that there are numerous other factors with which to cope than those commonly observed, if best results are to be obtained. Probably the most common method in the past has been that of selecting the seed corn from the whole field at husking time, by picking out what appears to them the good ears, their sole criterion being the appearance of the ear. They forget that when they select a good ear from the field they simply select a good female which has possibly and quite probably been fertilized by one of the worst scrubs in the field, unless prevented in doing so, and thus has adopted the undesirable characteristics of the scrub plant and combined them with its own, the combination to be produced in the succeeding crop. Furthermore, the selection has generally been made at such a time when it was not practicable to select for early maturity nor for characteristics of stalks upon which the ear grew. When we reflect and think of what our aim is when undertaking the breeding of cattle, what principles we recognize in animal breeding, and realize that

the same laws of breeding, heredity, atavism, variety, etc., exist in the plant world as in the animal world, the whole matter of plant improvement becomes perfectly clear and intelligible. If we wish to improve our herd, we look to the individual animal and select the one which, on account of past breeding and individual merit has proven its ability to reproduce the desired characteristics in its offspring. These same principles must therefore be applied in the improvement of our corn crop if we would increase the yield and improve the quality.

The Scientific Method of Improvement. The method by which the general farmer may most assuredly obtain reliable corn for seed purposes is, in our opinion, by means of a small breeding plot handled with some special object in view according to the purpose for which it is intended. For instance if he wished to grow seed corn for silage purposes, he pays special attention to the stalk, selecting from one that not only produces a large amount of grain, but one that is itself rich, succulent, leafy, and one that will remain green and tender until the ear has reached considerable development; but if ear corn or corn for husking is the chief object, the qualities of the stalk should be such as to facilitate the development of the maximum amount of grain but with less attention paid to the fodder side.

Going back to the Breeding Plot again, we should say a word regarding its location, for it is upon this that depends the purity of breeding which is so much desired and which at present is so difficult to obtain.

The importance of a sufficiently isolated location has already been suggested to our minds in our study of the corn plant when we noticed the distance that the pollen, the fertilizing element, has to travel before reaching the silks or female organs. This fact reveals the danger of pollen from other varieties or from undesirable plants or scrubs performing the work of fertilization and thus impresses us at once with the importance of having the plot isolated. Authorities claim that it is not safe to have such a plot as this within 80 rods of corn fields of other varieties for this reason. The location will depend upon circumstances, but it is preferable to have the plot on the south or west side of the farm unless neighbors on these sides have fields of corn within 80 rods, when it will be necessary to have the plot, perhaps, in the centre or on the northern border.

Size of plot. A convenient size of plot to handle is one consisting of twenty rows with from fifty to seventy-five hills in a row, the hills $3\frac{1}{2}$ feet apart each way. Each row is then planted by a single ear, the characteristics of which should be carefully recorded, as experiments go to prove that there is an immense difference between different ears even if they be produced by the same plant, and when one comes to select his stock supply he must select from those rows in the plot which are composed of the most vigorous and most productive plants bearing ears possessing similar characteristics to that ear which was chosen to plant the row. Where the selection is made on this basis it will be much more easy for the breeder to attain his end in securing a permanent large yield of high quality, because he has selected from prepotent plants as indicated by the resemblance they bear to their ancestors.

The plot planted carefully, no greater care is required in its cultivation than that given to the ordinary corn field. But when the tassels begin to appear comes the period in the whole process of greatest importance and one when greatest care is required. Our sole object from this time until the ears are formed should be to control both parents, or in other words to avoid the danger of having scrub plants fertilize the female organs of superior plants, the result of which would of course be an ear, but one which, though probably a good one in itself, would, when planted, produce

a lot of scrubs, or barren plants; that is, full grown plants which are devoid of ears. Not only should the breeder aim to avoid the danger of getting in bad blood, so to speak, but he should see to it that the ears he selects for seed purposes are not in-bred, or in other words that the selected ears have not been produced through the pollen of the same plant getting on the silks of the plant and thus producing an in-bred ear. In-breeding in open fertilized plants, such as corn, weakens the succeeding generations just as surely as it does in the case of in-breeding of animals and should therefore be avoided.

These precautions must be taken when the tassels first begin to appear at the leafy extremity. The grower should then aim to detassel all of the plants in every other row, as well as the inferior plants in those rows from which the tassels are not removed. In order that the 'pulling' out of these tassels be effective, the work must be done before any pollen is shed. It will therefore be necessary for the grower to go through the plot two or three times a week until the period of tasseling is over and remove such tassels as have been already mentioned. Furthermore, any stalks too small or weak to produce an ear, should be removed as such in order that more nourishment may go to produce ears more worthy of the name. On a large field it would scarcely pay to do this on account of the time it would require, but on the special breeding plot this work can be done with little trouble but with the far reaching results. If done carefully and conscientiously the silks on the plants in the detasselled rows will be fertilized by pollen from the other rows and the resulting ears on these rows will therefore be stronger and more vigorous, as they will possess the combined characteristics of two, strong, vigorous plants. The ears of next year's breeding plot are selected, of course, *only* from these detasselled plants and of these only from those which come nearest your ideal. The remaining ears produced on these detasselled rows may be carefully stored and used for next year's seed in the general field, sufficient being produced, under ordinary circumstances, to plant at least 6 or 7 acres. This plot should be utilized each year as a source of seed corn, and with careful handling a uniformly high type of corn will be developed. Up to the present we have been dealing with the question of producing high class seed corn more from the standpoint of the breeder, and I may say that the plans as outlined are those adopted and in operation by the C. S. G. Association.

In many cases it may be impossible for the farmer to follow such methods as have been described, but it is possible for him to do a great deal more than he is now doing in improving his own seed by selecting his best ears and planting them each year in separate rows in an isolated place and thus have a special plot from which to look for his seed in a more general way.

To those, however, who will carry on the work under the supervision of the Canadian Seed Growers' Association, considerable assistance may be promised both in systematizing the work of producing this seed in keeping the records of the same and in disposing of any surplus they may have on hand by cataloguing the pedigreed material.

The Association issues pedigrees for pure bred seed just as live stock associations issue pedigrees for pure bred live stock. In short, the Association which is supported entirely by Government Grant, aims to help those people who wish to help themselves.

Members producing seed corn, a quantity of which they may wish to dispose of, are required to dispose of all pure-bred material in the ear. For this purpose the corn crate is probably one of the most satisfactory devices.

The large corn breeders in the Corn States, such as Funk Bros., of Bloomington, Ill., who have 25,000 acres of land used in this work ship all their seed corn in this way.

As we have already mentioned, there is a large and growing demand for this kind of seed, but at present there is practically no supply. In view of taking advantage of this demand, as well as, in increasing and improving your own crop, I trust that a substantial number will take up this very interesting and useful work.

Caring for Seed Corn. Having produced high-class seed corn we must see to it that it is stored in such a way that the vitality will be retained. In this connection there are several points to consider in order to ensure good vitality and we cannot do better than notice some of the things which should be observed, as proven by experiments, to be very important.

1st. Never harvest immature seed corn and store it in a warm unventilated room, where it is likely to start to grow on account of the moisture and warmth.

2nd. That stronger seed is secured by letting the corn mature thoroughly on the stalks.

3rd. That the very best results are obtained by storing in a dry and thoroughly ventilated place.

4th. That cold does not injure the vitality of corn when thoroughly matured and kept dry.

5th. For this reason do not store corn over the stable or any place in fact where it is liable to gather moisture.

6th. Drying racks are probably the most satisfactory when arranged where the air can circulate freely. Although the old method of hanging up by the husks is probably equally as good it usually requires too much work. Finally I would say: always select enough to allow of the discarding of weak ears when you come to select in the spring.

How to Make Germination Tests. Lay out all the ears to be tested on some planks or on the floor. Remove two kernels from near the butt, the middle and the tip of each ear from different sides of the ear, then take a box, put several inches of moist sand or earth in the bottom. Place over this a cloth which has been ruled off into squares about $1\frac{1}{2}$ inches each way. Number these squares in order and place the kernels of ear No. 1 in square No. 1 and so on with all of the ears, then place over this a cloth somewhat larger than the box. Then cover this with one or two inches of moist sand or earth, moisten and keep in a warm place, and in 48 hours the kernel will have time to germinate. Reject all ears that have not given a strong and vigorous germination, keeping in mind that for every 20 ears rejected, you have saved approximately one acre.

MISTAKES IN SPRAYING.

By J. E. ORR, FRUITLAND.

During recent years, the spraying of fruit trees for the prevention of injury by insects and fungous diseases has been generally adopted in the principal fruit growing districts of Ontario. But its introduction has not been accomplished without many failures to attain the desired results, and in some instances being a positive injury to the orchards. Anyone who has heard discussions on the subject at Farmers' Institute meetings throughout the Province will be convinced that there are many disappointed ones who

have made an honest effort but who, in spite of all the instructions available, have made mistakes with more or less serious results, and who are ready to abandon the practice.

It is not the intention of this paper to give complete directions for spraying, but rather to point out some of the mistakes which I have observed in the work of those who have failed.

It is a mistake to suppose that any one remedy is suited for all classes of insects which attack our trees, and yet every Institute worker has found instances of failure where it was supposed that Paris green and similar poisons would kill aphids, red spider, etc. If a doctor were to prescribe for us without being able to diagnose our disease, we would call him a quack. There are lots of quack tree doctors.

If not familiar with the characteristics of the insect causing the trouble, we should first find out if it is a biting or a sucking insect. If it is a biting or a masticatory insect, then the Paris Green, etc., is the proper remedy. If it is a sucking or suctorial insect, then we must use coal oil emulsion, whale oil soap, or something which kills by contact. The vital point is to ascertain how the insect feeds. I once explained this difference to a youngster, and to satisfy myself that he understood, I asked him if his mouth was masticatory or suctorial. He replied that at present it was masticatory, but that it used to be suctorial. He understood.

It is a mistake to use any but pure chemicals. Paris Green is sometimes adulterated. This can be easily determined by dissolving a small quantity in ordinary household ammonia. The liquid will turn a bright blue, and any sediment that will not dissolve is adulterant. There are different grades of copper sulphate, and lime varies greatly in quality. It is a mistake to use any but the best.

It is erroneous to suppose that spraying alone is sufficient to control all insects, *e.g.*, the codling moth which in some districts continues to breed as late as September, long after spraying has ceased. The spraying in this case should be supplemented by bandaging. See page 50, Report of the Superintendent of Farmers' Institute, 1900.

Satisfactory results cannot be obtained without knowing the life history of the insect to be destroyed. Let me quote an example. There are some who say that Paris Green is not satisfactory for the tent caterpillar. Now, it is difficult to destroy them by spraying when they are well grown; but it is very easy if taken in time. The young caterpillar is developed in the egg case in the fall and is ready to emerge and start feeding as soon as growth starts, sometimes as early as the 20th of April. That is the time to use the Paris Green. Knowledge is power. The more one knows of the life history and habits of an injurious insect, the more easy it is to select the most vulnerable stage in its life. Without this knowledge, one cannot hope for the best results.

It is a mistake to use arsenic in a soluble form, for it is almost as injurious to plants as to animals when absorbed. Pure Paris Green is insoluble in water, but commercial Paris Green almost always contains some free arsenic which has not been combined with the base, therefore, lime should always be used with Paris Green. The lime water will combine with the free arsenious acid and render it harmless.

It is a mistake not to follow the formula implicitly. If a chemist wishes to obtain a certain result, he makes sure that the ingredients are chemically pure, and then weighs and mixes them with great care. The farmer has not learned this lesson of being exact, and therefore sometimes fails to get results and sometimes injures his trees. This was demonstrated this spring in the case of many people who injured their trees with soda Bordeaux

(Burgundy mixture). In addition to the formula they added Paris Green or some arsenical compound and the result was thousands of dollars of damage to the crop and many trees killed.

It was not known to them that when arsenical compounds are added to soda Bordeaux they became soluble and therefore injurious. It pays to be very exact. Do not follow the example of the man who ascertained the distance to the moon by guessing the half of the distance and multiplying by two.

A mistake is frequently made in preparing Bordeaux mixture by bringing together the strong lime water and the strong solution of copper sulphate. When this is done a reaction takes place, and new substances are formed; the mixture has a curdy appearance and is of no use. The proper way is to dilute the ingredients as much as possible before uniting them. It is a mistake to use Bordeaux mixture without testing it with a solution of ferrocyanide of potassium. A drop or two in the mixture when ready for use will show if there is sufficient lime. If the test changes color when dropped into the mixture add more lime.

Do not drench the trees but *spray* them. Sufficient pressure should be maintained to break up the mixture into a fine mist as it leaves the nozzle. On power sprayers where 100 or 120 lbs. pressure can be maintained the work is better done and less material required. After a tree is sprayed it should be covered as evenly with moisture as it would be on a foggy morning. Then every part of the plant is protected from the spores of fungi.

Do not use more lime than is needed to bring Bordeaux mixture to the proper test. It disfigures the fruit, clogs the nozzle, and I believe makes the mixture less effective.

It is a mistake not to stick closely to the spraying calendar in the early part of the season at least, or to cease spraying until the danger to the crop is passed. The early spraying can be definitely fixed. The later ones will depend upon the season and prevalence of the fungi and insects. "Watch and spray" should be the motto of the orchardist. There is as much in the watching as there is in the spraying.

FLOWERS IN THE HOME.

By PROF. W. N. HUTT, COLLEGE PARK, MARYLAND.

Anyone who really loves flowers can grow them. But the love for flowers that brings successful culture must be more than a passing desire for a plant form or color. It must be the tender affection that studies the plant's conditions and desires that looks at the roots as well as at the blossoms. A person who loves flowers will not live without them, but will want them for silent companions. One must be on such terms with the plant as to ask, "Well little plant, how are you? Are you hungry, are you thirsty, are you lousy?" The true plant lover must be observant enough to see the desires of flowers and be kindly enough to supply all needs and make the plant comfortable. Some plants are like hardy children that need no codling, but grow and thrive and flourish under almost any conditions. Others, like weakly precocious infants, have to be nursed and guarded and tended to keep them in life. But it makes little difference whether the home is in city or country, on the rich prairies or looking out from brick wall to a light shaft; if it is the home of a flower-lover plants will make it beautiful.

Conditions of Plant Growth. Although plants are of infinitely different kinds and are suited to a thousand varying conditions of environment, yet there are a few simple conditions that apply to all the higher forms of plant life. These are in brief, proper soil, moisture, temperature and light. The primal duty of the soil is to give the plant a fixed place of abode and to protect its most delicate organs, the roots. The soil also acts as holder of plant food. Water or moisture is not food for the plant but acts as a carrier of food to the plant. It makes little difference how much plant food the soil contains unless there is water to dissolve the food and take it into the plant. The taking up of plant food and the circulation of sap in a plant depend largely on the temperature of the plant body. If the temperature ranges too low the plant suffers a check in growth or if it goes too high the leaves wilt. The hardiness of a plant is determined by the range of temperatures it will stand. More important still in the economy of plant growth is light. Light is the potent force that combines the various elements from soil and air into plant tissue. It is the energy of light that makes the leaf green and the flowers bright. Any lady who has ever tried to grow house plants will have noticed that they are not very aristocratic in their tastes, but do better in the environment of the kitchen than in the more conventional air of the drawing room and parlor. This is because the atmosphere of the kitchen, on account of cooking operations and the frequent boiling of water, is quite moist while the air of the sitting room and parlor is dry and robs the plant cells of their living moisture. For this reason house plants do best in kitchen windows or in rooms where the air is kept moist. Most plants show a sickly, yellow, spindling appearance where the air is too dry. If one has a house conservatory the floor should be of cement so that the floor can be sprinkled and the air thus kept moist by evaporation.

The Choice of Window Exposure. A south window is preferable to all others for house plants. Nearly all plants grow and thrive in full sunlight. The trouble with many house plants is that they never get enough of it. In a south window the flowers get the early sun and become gradually tempered to the extreme light and heat of the afternoon. They also use the setting as they do the rising beams of the sun. A west window is the poorest exposure of all because the plants do not get the sun in the morning and it breaks on them suddenly in all the heat and strong light of the afternoon. Next to a southern exposure it is obvious that the east is best. One might suppose that on account of getting no direct sunlight a northern window would not grow plants at all. But all non-flowering plants, such as ferns, palms, asparagus, aspidistras, rubber trees, ivies, etc., will do well there. It may be taken as a general rule that plants grown for flowers need a large amount of sunlight while those grown for foliage will do with a small amount of direct sunlight or even grow in the diffused light of a situation where the sun never reaches.

Soil. The soil for house plants should be very porous and rich in plant food. Since the plant has to satisfy itself with the small amount of earth contained in a flower pot and the roots cannot range widely as they would in an open garden the potting soil should be the very best soil possible. Pot culture is the extremest form of intensive cultivation and all the conditions should be made as near ideal as we can well make them. Black muck or loam contains a good deal of plant food, but such a soil is apt to become heavy and sour. In order to make the soils light and porous so that the roots can penetrate it easily and also so that it will drain well we must have a considerable porportion of sand. This also keeps the soil from becoming sticky when wet. A well-made potting earth should not stick to or soil the hands. It is what some florists have described as "clean dirt."

It is not necessary, as many people affirm, to have many different kinds of soil for different kinds of plants, but all common household plants can be made to flower to perfection in a soil of common make. The best potting soil I know of is made of equal parts of rotted sods or leaf mould from the woods, rotted manure and sand. In making this compost, sods are cut from an old pasture or other rich soil or the leaf mould taken from the woods and piled with alternate layers of decayed manure. The pile is wetted to rot the sods and dug over every week or so. When the whole is thoroughly disintegrated it is put through a sieve of half inch mesh to take out coarse particles. Half as much sand is added and the soil is ready for potting any kind of plant. It is well to have soil making in advance of potting so that it will be thoroughly disintegrated when wanted for use. Of course, there are plants that from long natural environment desire special soils, for example, the ferns which by nature grow in very rich peaty soils. These we should pot in our common potting soil, but we might humor them by giving a little more leaf mould or humus and a little less sand. Plants which, like the primrose, have very fine fibrous roots, show that they want rather a light soil so we put a little less sods and more sand in the mixture. Plants like roses, with few fibres on the roots, show that they want a heavier soil so we give a little more sods and somewhat less sand in their soil. This studying of the special likings of plants is in itself not an uninteresting feature of raising flowers.

Kind of Pots. To get the best results flowers should be grown in unglazed earthen pots. These are porous and as they allow of considerable evaporation of moisture from the outside surface, the soil inside is not apt to become sour from excessive water. I have often seen good plants raised in tin cans, but pots are now so cheap that they are about as easily obtained as the tins and of course they are nicer to handle and look much better. Large, fancy glazed tiles and pots are almost sure to give bad results. Except with the most careful handling the soil will become sour and the plant become unhealthy and die. When for table decorative purposes we wish to cover the earthen pot we may set it in an art jardiniere.

Drainage. All potted plants should have good drainage. As has been said before, the soil should not be too heavy and retentive of moisture. The roots of plants should never be allowed to become dry, but they can use only a very small amount of moisture at one time. Roots never do well if they are forced to lie in water. The surplus water not needed by the roots should be quickly drained off. To facilitate the rapid passage of water through the pot the soil is made sandy. In pots of over four inches across the top the water does not drain off fast enough and it is necessary to put an inch or so of drainage material in the bottom of the pot. The best material for this purpose is broken pots or lumps of charcoal from one-half to one inch in size.

Watering. More mistakes are made in watering plants than in any other part of their culture. Most beginners water plants too much or too often. Some housekeepers water their flowers regularly every day and wonder how the plants do not do well since they give them so much attention. The trouble is that the plants get too much attention; if they were forgotten once in a while in the matter of water they would do better. Plants should not be watered until they show by the drying of the soil that they need it. When they are watered they should not receive a little dribble but should be thoroughly soaked until the water drips from the hole in the bottom of the pot. This insures all the roots being thoroughly wetted. Roots need fresh air as well as water, and in thoroughly soaking the soil in a pot the vitiated air is forced away from the roots and fresh air takes

its place as the soil dries out. The bad results from too frequent watering is that the soil never gets sufficiently dried to admit air to the roots. A good test of when a plant needs watering is to rap on the pot with the knuckles. If the pot gives a hollow sound the plant may be watered, but if the sound is dull and heavy no water is required.

Resting of Plants. There are no plants that will bloom all the year round though some have a long period of flowering. Plants that bloom in summer will not usually bloom in winter and vice versa. To get an active growth of a plant at one time we must give it a corresponding period of inactivity. Some plants such as fuschias, petunias, geraniums, etc., we can have flower either in summer or winter provided we rest them at the alternate season. Other plants such as oleanders do not flower well except in summer. To get the best foliage and flowers from a plant during its active season we must make its rest as complete as possible. When a plant shows need of rest active growth and flowering cease and the leaves begin to turn yellow. Some plants shed their leaves entirely. To encourage resting, water should be given in reduced quantities and the plant set in a cool dark place, as in a dry cellar. The plants should be examined occasionally and just enough water given to keep the plant or bulb from drying up entirely. Plants that are wanted for summer blooming should be cellared or otherwise rested from October to April. When their time for growth comes again they will give evidence of activity by starting into growth. At this time they should be repotted and brought to the light and given water. As the flower buds begin to appear they should receive weekly applications of liquid manure. This will very materially increase the size of the bloom.

Repotting of Plants. After plants are rested they are usually repotted on taking them out of the cellar. If the pot containing the plant is turned upside down and the top of the pot rapped smartly against a table edge the plant and ball of earth will separate freely from the pot. The old dried soil is rubbed off with the fingers until fresh roots are seen. As much of the old soil as possible is removed without disturbing the roots. The plant may now be placed in a pot a size or two larger and fresh potting soil packed carefully about it till the pot is filled to within half an inch of its rim. Of course an inch or two of drainage should be given in the form of potsherds or lumps of charcoal. After being repotted the plant should be watered and shaded for a day or two. Plants should never be placed in pots a great deal larger than those in which they have grown as the soil is apt to become sour and the plant become unhealthy or die. Even if the soil does not become sour the plant getting a great deal of root room is apt to grow stem and leaves rather than flowers. Plants usually flower better by having the roots somewhat cramped for room.

Starting Plants from Seed. All plants that can be so propagated are best started from seed. Seeds are usually planted in March and April in shallow boxes called flats. Flats can readily be made by cutting down ordinary soap boxes to about three inches in depth. About two inches of potting soil should be placed in the boxes and packed smooth with a bit of board. The seeds can be scattered on this smooth surface and covered lightly with a little fine soil sifted over them. Very fine seeds can scarcely be covered with soil, but may be protected from drying by a damp woolen cloth spread over them. If the room is not very warm or the window situated to get the full sun, an inch of fresh horse manure should be placed in the bottom of the boxes. After the little seedlings come up the boxes should be turned every day to keep the plants growing erect. As soon as they are large enough the plants should be pricked out; that is transplanted into another flat, put-

ting the plants an inch apart each way. If wanted for garden planting the seedlings may be set out from the second flat when they get to crowding too much. For house culture the seedlings may be planted in thumb pots. The plants, if well tended, will soon grow too large for these small pots and will need to be shifted to larger ones. When a plant is ready for shifting the roots will have netted all about the ball of earth. This can readily be seen by reversing the pot and rapping the plant out. This rapping out does not injure the plant in the least. When ready for shifting the roots are closely matted and are of a creamy white color. If a plant has grown in a pot too long without shifting, the roots on the outside of the ball of earth will be of a brown color and somewhat dried. At the time of repotting, the plant should be shaded and the top nipped back to make the plant bushy. During the season a plant may be repotted several times until it is in a pot large enough in which to bloom.

Starting Plants from Cuttings. Most plants may be started from cuttings as well as by seeds. With geraniums, coleus, oleanders, fuschias, begonias, etc., the cutting is the common method of propagation. The coleus and oleander can be very easily started by placing the slips in a bottle of water. In ten days or two weeks in a water bottle in a warm window a fine growth of roots will be started. A very easy and successful method for starting all kinds of herbaceous cuttings is the saucer method. This is simply a deep saucer, or better, a soup plate, filled with sand and set in a sunny window. The cuttings have all but the last two or three leaves removed and are stuck in the sand as closely as they will stand. If carefully put in a soup plate would hold as many as a hundred slips. The sand should be kept constantly wet. A single drying out would ruin all the cuttings. In taking cuttings they should always be so fresh that they will snap off like crisp radishes. If the wood is so old that it bends instead of snapping it will not make good cuttings.

Use of Fertilizers. If a potting soil is well made and plants are shifted or repotted when they require it, there is no great need of special fertilizers. However, when plants are preparing for flowering and swelling their buds, it is a good plan to give liquid manure once or twice a week. Liquid manure is best made by leaching well-rotted cow manure. When used on the plants, liquid manure should not be stronger than the color of weak tea. With the amateur florist there is a danger of overdoing the application of fertilizers. Liquid manure should never be given to sickly plants or when they are preparing for resting, nor can it be used with safety in dull sunless weather. Concentrated plant fertilizers are not often used by the amateur and are best given a test before too general application.

Insect Pests. It seems almost impossible to grow house plants without considering the matter of insect pests. It is not a mark of carelessness or bad management that house plants occasionally become lousy, for plant lice seem to be almost ubiquitous, but it is a sign of a bad florist if they are allowed to remain. The insects that give most trouble with house plants are three, viz.: Aphides or plant lice, mealy bugs, and red spider. All of these insects increase or multiply with enormous rapidity. If a few lice are found, speedy measures should be taken for their destruction or a few days or a week will see them swarming in hundreds and thousands. If plants are kept healthy and their foliage syringed often, there is not much danger of lice, but occasionally they will come in on new plants. When lice are seen the plants should be dipped in soap-suds. A wash of a consistency that will kill all lice and not injure the most delicate plant is made of one-fourth pound of ordinary soap dissolved in a pail of warm water. This will also destroy the mealy bugs and red spider if the plants are dipped in it often.

enough. Red spiders are never found on plants that are syringed daily. Their presence always indicates that the air in which the plants are kept is too dry. Tobacco in the form of smoke or washes is much used in florists' establishments for keeping down insects, but its odor is offensive to most ladies. One of the newer remedies for plant insects that seems to be taking the place of every other remedy is fir tree oil. It is applied with a syringe or atomizer in the proportion of one teaspoonful to a pint of water and is death to all plant lice.

General Care of Plants. As has been said, to grow fine plants one must love them enough to study their habits, yet there are some general characteristics that would be patent to even the most observant. For example, plants breathe as do animals and for this reason should have abundance of fresh air or they get sickly as would people under similar circumstances. The lungs of the plants are the leaves, so the leaves of the plant should be kept clean so that respiration is not interfered with. When rooms in which plants are kept are swept, the plants should be covered to keep the dust from stopping their breathing pores. Plants with smooth or glabrous leaves should be washed or syringed frequently. Hairy or downy leaved plants should be kept clean, but will not stand spraying or wetting of the foliage. To get plants symmetrically formed they should be turned about every few days or else they will smile on the street and turn their backs on the folks of the house. On house plants where the flowers are not cut for bloom they should be removed as soon as the blossoms fade. If this is not done seed will usually form and the plant stops blooming. In setting plants in a window, of course, the smaller plants would come in front and the taller ones in the rear. Besides this arrangement plants should not be set too close together or they will grow tall and spindly. Flowering plants grow very poorly in houses where illuminating gas is used.

But why multiply rules and directions, for it takes away half the pleasure from the amateur flower grower in not letting him make his own observations and solve his own problems.

DRAINAGE.

BY PROFESSOR J. B. REYNOLDS, O.A.C., GUELPH.

The question of drainage may be considered from two points of view: first, **Economic**; second, **Engineering**.

Under the first head may be considered the need for drainage, the benefits of it, the particular conditions under which it is desirable, and its cost. Under the second head the methods and operations of drainage are considered,—the depth and distance apart of the drains, their position in relation to the slope of the land, the amount of fall, the sizes of tile, the actual digging, laying and filling in, and drawing a plan or map of the system of drain for future reference. We shall consider first the economic view.

The Need for Drainage. One necessity for drainage is its effect, by the removal of free or surplus water, in *firmit* the soil, and thus making early spring cultivations possible. A very wet soil is almost fluid in its character, the excess of water preventing adhesion among the soil particles. A very dry soil, especially if heavy, has its particles cemented together, after drying out, by the material that was held in solution in the water. A moist soil lacks the cemented condition, and, therefore, allows of easy

cultivation, but at the same time the moderate amount of water present, by its own surface tension, holds the particles together by a force feeble yet strong enough to bear the weight of horse and implements. The firm character of beach sand that has been wetted by the waves and yet stands high enough above the water to drain out the free water, compared with the soft and yielding nature of the same sand when dry, illustrates the binding effect of the capillary water.

The second necessity for drainage consists in the fact that a certain amount of leaching is at times desirable and even essential. If capillary movements of water are going on all the time in the soil, these bring up to the surface salts of all kinds that are contained in the subsoil. This capillary water when it reaches the surface is evaporated there, and leaves behind at the surface the salts that it held in solution. Unless there is a certain amount of downward movement of water to wash out these salts, there tends to be an accumulation of salts at the surface soil, that finally by their excess act as poison to the growing crop. Such excessive accumulation is likely to occur in swampy soils, and in arid regions where there is not enough rainfall to produce percolation. In arid regions, particularly as in South Alberta, in the mountain valleys of British Columbia, and in the middle western States, there occur what are known as *alkali lands*, that is, lands with an excess of alkali at the surface. One effective remedy for alkali, in arid regions, is irrigation and thorough underdrainage, which washes out the alkali and carries it away. Where there is abundant rainfall and snowfall, underdrainage is necessary in order to prevent surface washing. The excess water must get away somehow, and while undoubtedly there is some loss of plant food through underdrainage, there is much more when the surplus water is allowed to run off the surface.

The third need for drainage lies in the stagnation of water in undrained soils, and the consequent exclusion of air. It must be kept in mind that an abundance of oxygen in the soil is as needful for the plant as oxygen in the atmosphere is needful for the animal. The germination seeds need oxygen, or they will rot; the roots of plants need it in order to do their work; and the innumerable bacteria that work in the soil converting the crude manure to plant food, must have oxygen in order to thrive. Besides, the chemical changes that are continually going on in fertile soils, converting crude material to plant food, need both oxygen and carbon-dioxide. Hence we see the need for good drainage, that air may enter the soil in abundance. But the stagnant water in undrained soils, besides excluding air, keeps the soil cold. A *proper temperature* in the soil is as necessary as plenty of air. Growth cannot begin in the soil until it has attained a temperature of 45°, or thereabouts, and the best results in growth are reached only when the temperature of the soil has risen to about 70°.

How Drainage Ventilates the Soil. When free water may be found, by sinking holes, within two feet of the surface, capillary action will keep the soil to the top of the ground so nearly full of water that there is little room for air. But when there is a drain three or more feet below ground, the standing water is lowered nearly to the level of the drain and hence plant roots are allowed to extend more deeply into the soil. Activities of various kinds, such as earth-worms, ants, and plant-roots follow the retreat of the free water into the deeper soil, and these activities form drainage channels through which the air may move freely to and fro. The drying of the soil, especially clay soil or soil with much humus, results in shrinking, and thus other channels are afforded for air movements. With all these channels extending down to the level of the drain, the air has freedom of movement. This is of special value in time of heavy summer showers.

These showers quickly seal all avenues of escape upward for the soil air, and unless there is a way of escape below, the soil air is imprisoned between the water above and the impervious soil below. Consequently the rain-water is unable to enter the soil, runs off the surface, and is lost to the soil. But if the land is underdrained, the soil air can escape through the drains, and the water can follow it into the soil channels. Drainage thus is frequently a safeguard against drouth. In another way it is a safeguard against drouth, by enabling the roots of plants, early in the season, to penetrate the soil to a greater depth, and therefore in time of very dry weather to be feeding in the moister soil below rather than perishing in the dry surface soil.

Circumstances in which drainage is desirable. It may be inferred from the foregoing that underdrainage, the percolation of water downward and outward through the subsoil, is essential to the well-being of crops. It does not follow, however, that tile-drainage is necessary for all lands. Fortunately, many lands have natural underdrainage quite sufficient. The special conditions that make artificial drainage necessary are: *first*, lands that have close, retentive subsoils, through which water percolates very slowly; *second*, low flat basins or sinks that become flooded with surface washings from higher lands surrounding; *third*, low areas where the seepage or underground waters from higher lands collect, forming springs. Of the first type, whole fields and farms of level clay land are sometimes found to require drainage; of the second, are the low, wet spots, ponds in the fields in the spring or after heavy summer rains; of the third, springy hillsides or bottoms. In all of these instances, the natural drainage is evidently insufficient, and requires to be supplemented by artificial drains.

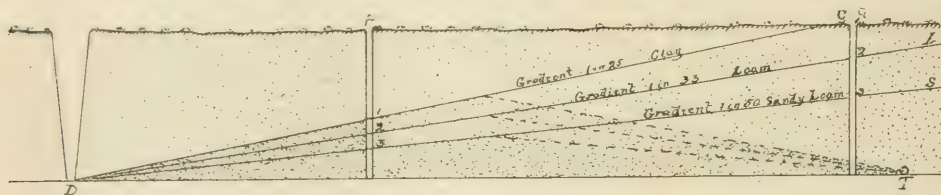


Fig. 1.—Showing the influence of drains on the ground water. The line D C represents the surface of the ground water in a clay soil 48 hours after a soaking rain; D L represents the gradient of ground water in a loam soil; and D S in a sandy loam.

The dotted lines from T show the new ground water surfaces if a drain was placed at T. The heavily shaded portion shows the subsoil space that is saturated with free water 48 hours after a soaking rain with drains at D and T. The light shading shows the soil space that has capillary water only. P and Q show holes dug in the ground at different distances from the ditch D, and the figures 1, 2 and 3 in below P and Q show the height to which standing water would be found with no drain at T.

Relation between drains and the ground water. The standing water in the ground seldom presents a level surface. Suppose that a level field 10 rods wide has a ditch 4 feet deep along one side. The soil-water along that side of the field next to the ditch will of course drain away first, while the water in the soil more distant from the ditch will gradually percolate towards the ditch. The structure of the ground through which the water must pass will control the rate of drainage, but in any event the surface of the free water in the soil will not be level but will slant upward from the ditch bottom, at a slope depending upon the character of the subsoil and the length of time that has elapsed since the ground water began to fall. Figure 1 illustrates this point. From the ditch, D, the ground water would rise at a grade or gradient of 1 foot in 25 in a close subsoil: in a medium loam subsoil 1 in 50 or more. The lines DC, DL, DS represent the gradients in clay,

loamy, and sandy soils, respectively, so that if holes are sunk at P and Q the water in a clay soil would stand at the levels 1, in a loam at 2, and in a sandy soil at 3. If now a line of tile should be laid at T 4 feet deep, parallel to the ditch and 110 feet from it, there would be a change in the ground water gradients, as indicated by the dotted lines. This diagram with the dotted lines shows the influence of drains on the ground water, and the increase of space available for soil activities. Now it is evident from Figure 1 that there is a relation between the character of the subsoil and the distance apart at which drains may be laid to be effective. Also, there is a relation between the depth of drains and the distance apart, which may properly be considered here. Suppose that a fairly close soil is to be drained, in which a gradient of 1 in 30 must be allowed for. It is desirable to have the ground water at its highest point not less than 2 feet below ground within 48 hours after a heavy soaking rain. Then if the drain is laid 3 feet deep, that allows a rise of 1 foot in the gradient from the drain to the highest point, that is a distance of 30 feet; so that the drains may be 60 feet apart if 3 feet deep; by similar reasoning it may be seen that if the drains are laid $3\frac{1}{2}$ feet deep they may be 90 feet part. Figure 2 shows this relation. Thus there would be 3 lines of drain 3 feet in place of 2 lines $3\frac{1}{2}$ feet deep.

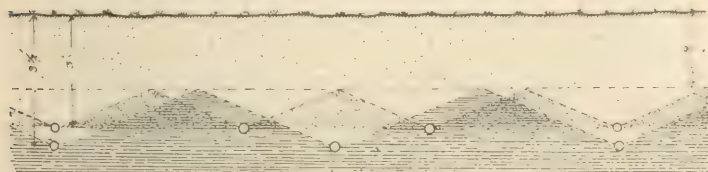


Fig 2.—Showing the relation between depth and distance apart. The heavily dotted portion, less the plain barred portion, shows the amount of ground gained by deep drainage.

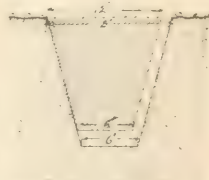


Fig. 3.—Showing the extra amount of digging required for a $3\frac{1}{2}$ foot drain over that required for a 3 foot drain.

To compare the efficiency and the cost of deep and shallow drains. The water will reach the shallow drain first. That is one point in favor of the shallow drain. But, 48 hours after the rain, the deep drain will afford more ventilated space for air-movements and root growth, as is shown by Figure 2. That is a count in favor of the deep drain. In special cases, as in market gardening, where quick maturing of shallow-rooted crops is the object in view, it is evident that the shallow drain is preferable. But in general farm crops, and in orchards, the deeper drain is on the whole more efficient. Now, as to cost: in the particular instance above, there are for a given area three drains 3 feet deep, or two drains $3\frac{1}{2}$ feet deep. Suppose that in the 3-foot drain, the ditch is 12 inches wide at the top and 6 inches wide at the bottom. For 12 yards of drain, 3 cubic yards of soil would have to be excavated. The $3\frac{1}{2}$ foot drain, for the same proportions, would be 13 inches wide at the top and in 12 yards in length there would be very nearly $3\frac{3}{4}$ cubic yards of earth. As seen above, there would be 3 lines of 3-foot drain to perform the duty of 2 lines of $3\frac{1}{2}$ foot drain, so that the proportion of work required to dig the drains for a given field would be 9 for the 3 foot drains to $7\frac{1}{2}$ for the $3\frac{1}{2}$ foot drains. Since the latter would be somewhat more difficult to dig on account of going deeper, the cost in labor for the two methods would be nearly equal as 9 to 8. The cost of tile, unless the fewer lines of tile would require a larger size, which would not necessarily be the case, would be 50 per cent. more for drains 3 feet deep than for $3\frac{1}{2}$ feet deep.

It would appear, therefore, that for general farm purposes the deeper drain is more efficient and less costly. On the other hand, if the drain is too deep, in a clay soil the surface water would be too long reaching the drain, and one important effect of draining, the earlier seeding as a consequence of earlier drying of the soil, would be lost: and in a sandy soil, the deep drain would lower the ground water so far that the weaker capillary power of the sandy soil might be unable to carry water up to the roots of shallow-feeding plants. A moderate depth then, is to be recommended for general purposes, and for average conditions drains laid $3\frac{1}{2}$ feet deep and 100 feet apart will provide good drainage.

Engineering for Land Drainage.

Outlets. The most important consideration in drainage operations is the selection and preparation of a suitable outlet for the drainage waters. All other details of draining may be correct, but if the outlet is faulty or insufficient, the working of the whole system is faulty and insufficient to the same degree. Much of the expense of draining an area of land is often incurred in reaching a satisfactory outlet, owing to the fact that there is no natural drainage basin near at hand, and the drainage water has to be carried some distance through channels specially prepared. This is particularly the case in the prairie lands of Western Canada, where there is much low land unfit for cultivation because of lack of drainage, and drainage would be expensive on account of the distance from a proper outlet. Such outlets are frequently, in older and more settled districts, provided at the public expense.

Different systems of drains. The drainage water from a field may empty, through a number of separate outlets, into a creek bed or an open ditch: or the different lines of tile may be grouped by emptying a number of smaller drains into larger drains. In this discussion we shall use terms referring to various uses for drains, as follows:

A *Main Drain* is one which is used to collect drainage water from smaller drains and conduct it to some open ditch or natural stream.

A *Sub-Main* is a drain which discharges into a main, and is itself a receiving-drain for lines of smaller tile.

A *Lateral* is the smallest drain in the system, and discharges into a main or sub-main.

The Natural System. This is so called because the drains are laid in the low places and natural water-courses only, and are thus an aid to natural drainage. Such drains are compelled to do duty sometimes for a very large area, since the water from surrounding high lands is drained through them, as well as that which rightfully belongs to the area immediately drained. Hence tile for such circumstances should be large enough to allow for occasional flooding.

The Grouping System. This is an extension of the natural system, and is applicable to areas having low, wet basins separated by high, dry land. A main is laid in the lowest land of each basin, and laterals leading out in all directions as far as necessary.

*The Gridiron System.** This is the approved method for draining whole fields thoroughly. A level field of close, retentive soil obviously requires uniform drainage throughout, not detached and isolated lines or groups of drains. Thorough drainage consists in removing the water from all parts of the field so as to have uniform conditions of moisture, texture, and temperature at all times and in all conditions of weather, and where the soil of the whole field is uniformly tenacious of water a uniform system of drains

should be adopted. The gridiron system consists of equidistant parallel lines with mains and submains for collecting and conducting the water to some outlet. This system has the advantage, over the one following, in having only one outlet to build and to keep clear.

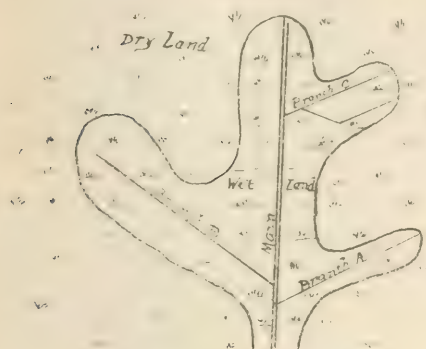


Fig. 4.—The natural system.



Fig. 5.—The grouping system.

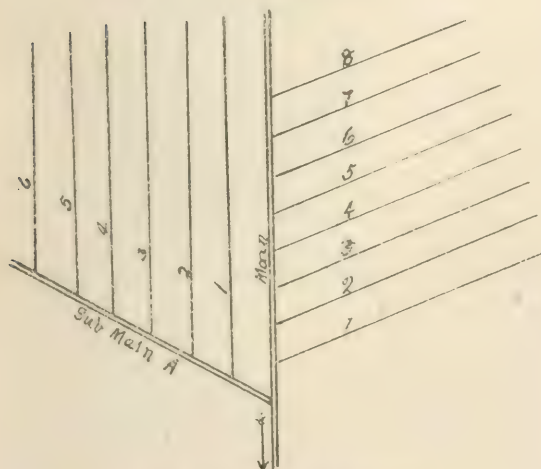


Fig. 6.—The gridiron system.

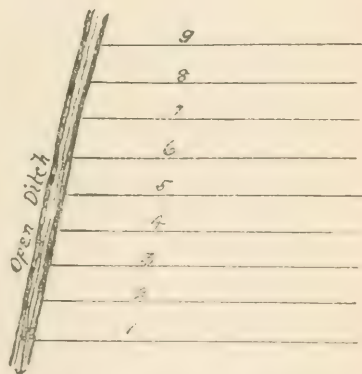


Fig. 7.—The single line system.

The Single-Line System. This is similar to the gridiron but has no mains or submains, each line having its own outlet in the ditch. The system is suited to large areas with only slight fall, the lines of tile being laid in the direction of greatest slope.

Principles to be Used in Locating Drains.

1. *Lay mains in the line of natural drainage.* This rule refers to mains, not laterals. The natural water-courses are such, not merely because they are of lower elevation than the surrounding ground, and thus take the surface wash, but also because the conformation of the subsoil is favorable to underdrainage toward these water courses. By laying mains in the lines of natural drainage, therefore, we work with, and not against, the natural structure of the soil. Of course, it is not necessary to follow the natural water course through all its windings, and often a short cut to the outlet may be made with advantage. But the general principle holds good.

2. *Laterals should be laid in the line of greatest slope.* It is thought by some that if the drains are laid across the slope, they may intercept the soil-water in its progress to the lower parts of the field, and prevent flooding there. But suppose that the soil water flowing through the soil on a steep grade should be intercepted by a line of tile laid nearly level. The water having entered the tile may either flow along the tile or pass out at the joints on the lower side and continue its way through the soil. If the drain has not sufficient fall to carry off the water rapidly, the latter will occur, and the drain fails to do its work. But if plenty of fall is given to the drain, it will carry off the water quickly, and leave room for other little streams to flow through the joints. Usually the water-gradient is steeper than the slope of the land, so that the water will find its way into the tile provided the tile has sufficient fall to empty itself.

Laterals should be long, and parallel. In other words, the fewer junctions of laterals with mains and submains, the more economical the system. It is obvious that at a junction both lines of tile are not doing their full duty. Every main or submain will drain a territory 25 to 50 feet on each side of it, and when a lateral on its way to join the main comes within this territory it becomes useless as a drain. Since this loss of duty occurs at every junction, the reason for this rule is at once evident.

Data required for locating drains. There are some areas requiring drainage in which the courses of the drains,—mains and laterals—are more or less clearly marked by natural water-courses, and by decided slopes towards these courses. In such instances, the land should be inspected by one familiar with the surface and also with the peculiarities of the subsoil. From this inspection the system of drainage may be decided upon, the general depth of the drains fixed, and the courses of the drains more or less definitely marked. Here, owing to the decisive character of the surface, the eye is a sufficiently accurate instrument. But other areas, more nearly level, having no clearly marked water-courses or slopes, frequently require drainage, and in such cases the eye is not sufficiently reliable. Where the fall is slight and the whole surface nearly level or gently rolling, a levelling instrument of some kind must be used to secure good results.

Levelling. Levelling, by whatever instrument it is done, consists in finding how much one point is higher or lower than another. It is done by running a *level line*, which is the continuation of a line of sight given by a *levelling instrument*, and finding on a *levelling rod* the elevation of this line of sight above certain points at the ground surface.

Levelling Instruments.

There are various kinds of levelling instruments used from the plain straight edge with a carpenter's level set on it, to the delicate and sensitive telescope-level. The kind that should be used will depend upon the class of work to be done. For some work, where there is plenty of fall and where great accuracy in determining the difference in levels along the course of a drain is not essential the commoner forms of level will suffice. But for work of any difficulty and magnitude, it is good economy to secure the use of an accurate instrument, so that no mistake may be made in laying the tile to the proper grade. The need for accuracy in grading drains is not always rightly appreciated. A tile-drain is not like a fence, which if wrongly built or wrongly placed can be removed or righted without much loss. An error in laying tile is not found out until the drain fails to do its work, and in the meantime much harm and loss have resulted.

For short distances with plenty of fall, levels may be determined by means of a straight edge, 10 or 12 feet long, set on cross sticks and levelled with the aid of a spirit level. By sighting along this edge to a rod a short distance away, the difference in level between the two points may be got. This method is slow if long distances are to be levelled, and not accurate enough for nearly level land. A better method is to mount 'sights' on the spirit level, and to provide the spirit level with some kind of tripod support. A third kind is the water level, made of an iron or tin pipe about 4 feet long, turned up at the ends and supported at the centre by a rod sharpened to a point at the lower end. Glass tubes are fitted to the ends of the pipe and the whole nearly filled with colored water. The support being driven into the ground, the water surfaces in the glass tubes will be on the same level, and by sighting across these surfaces the level may be determined.

All these methods are suited only to short distances, and if a long course is to be levelled, the operation must be repeated so often that for large areas the work is very slow. Besides, very accurate work is not possible by these methods. For really accurate work some form of telescope instrument is necessary. To describe this instrument, and to give a detailed account of the work to be done with it, is beyond the scope of this paper. Farmers wishing to understand the telescope-level and its use in draining are recommended to read "Engineering for Land Drainage" by Elliott, published by John Wiley and Sons, New York, and further, if possible, to secure the use of such instrument and go over a field according to directions given in that book.

The levelling rod. The levelling rod is a straight rod or pole on which the elevation of any point is read by sighting along the level line furnished by the levelling instrument. Any rod divided into feet and tenths of a foot, will do for this work. The intersection of the line of sight with the rod may be determined by the rod man adjusting a narrow black band fitted to the rod, according to signals given by the man at the level. The position of the band on the rod is then observed and noted in the field book. With a telescope level the observer himself can read the number on the rod without the use of the adjustable band. Having read the elevation of the line of sight above the ground at one station, the observer signals to the rodman to proceed to another station in the same course on the opposite side of the observer and the same line of sight is extended in the opposite direction till it meets the rod at the second station, and a second reading is obtained. The difference in these readings is the difference in level between the two stations. By repeating this process, the relative elevations of all points desired may be obtained (Fig. 8.)

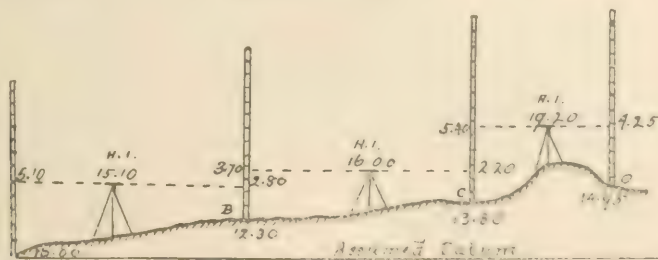


Fig. 8.—Showing method of taking levels with levelling instruments and rod.

Firing the Grade of Drains. It will now be assumed that by some means, whether by the eye or by systematic levelling with an instrument,

the courses of the various drains have been decided upon. It remains to use proper methods whereby first, the grade or slope of the drain is fixed, and secondly, that grade may be correctly carried out from start to finish. First, to fix the grade. To do this, the total fall from the head to the outlet of the drain must be known. If the slope of the ground is uniform over this course, it is enough to know the total fall, and this may be divided proportionately to each hundred feet in length. A uniform grade, of course, is the simplest and should be carried out where practicable. Suppose that the length of the proposed drain is 300 feet and that the total fall from head to outlet is 12 inches. That will allow a fall of 4 inches per 100 feet. But where the surface of the ground changes in slope, it is sometimes necessary to change the grade of the drain to suit, as in Fig. 9. in order to avoid going too deep through a ridge or too shallow through a depression in the field. Where a change of grade is necessary the grade should if possible become steeper toward the outlet.

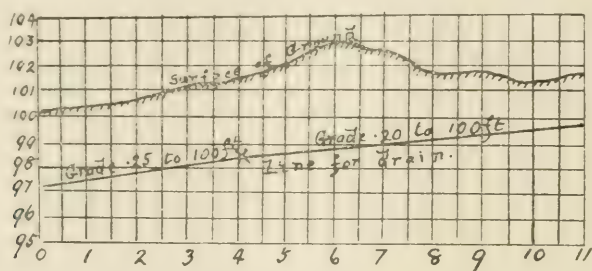


Fig. 9.—Showing grade of ditch changed slightly to accommodate a rise in the ground surface.

Having found the total fall and total length of a proposed drain, the one in charge should divide this into sections of 100 feet, either equally, if the grade of the ditch is to be uniform, or say 3 inches per 100 feet for the first part of the drain, and 4 inches for the latter part, if the grade has to be changed. Then, at intervals of 100 feet, stakes should be driven along the course of the drain, having notches cut in one side. These stakes should be driven into the ground until the notch in each is 5 feet above the bottom of the proposed ditch. By tacking a strip horizontally across each stake just at the edge of the notch and sighting along these strips, the observer should see that the strips are in line. Fig. 10.

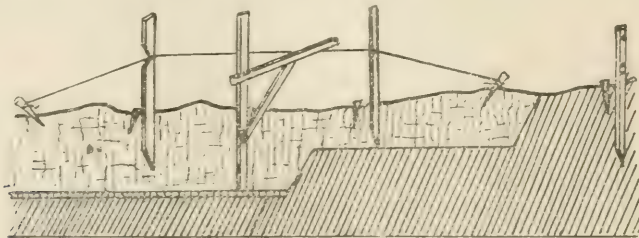


Fig. 10.—Showing method of securing a proper grade line for a ditch.

The guide stakes being now set, a stout cord 120 feet in length or more should be procured, and to each end a short guy stake attached. These guy stakes are driven into the ground, each one beyond one of a pair of adjacent guide stakes, so that the cord passes over the notches and is drawn taut. If the cord sags, it should be supported at the middle by another

stake. Next, a stick with a cross bar, as shown in Fig. 10, is procured, with a length of 5 feet from the foot of the stake to the top of the crossbar. With the proper tools, all is now ready to begin digging.

The digging of the drain should begin at the outlet. A skilful drainer will minimise the amount of digging by having a narrow ditch, with sides tapering to a bottom just wide enough for the tile. As the bottom of the ditch is neared, the 5 foot stick with the cross-bar is used as a guide for securing the exact depth, the bottom of the ditch being scooped out until the top of the cross-bar just touches the cord when the foot of the stake is at the ditch bottom, the stake being held exactly vertical. When the first 100 feet has been dug and graded, the cord may be shifted to the next hundred, and so on.

The Grade necessary for Drains. It frequently happens that lands requiring drainage are level or nearly so, and the fall that can be given will be slight at the best. The question then becomes, what is the least fall with which a drain can work. In drains that are nearly level, the water finds its own head by 'piling up' at the upper blind end of the drain, thus standing at a greater depth in the drain from the outlet backward. For nearly level drains a larger tile should be used, since the capacity of the tile in this instance is lessened by the water standing in it. The only rules that can be given where the fall is slight are to secure as much fall as possible, to make the grade perfectly uniform, and to lay the tile very carefully so as to have no unevenness in the bed over which the water flows. Then, of course, the actual fall of the ground surface, if slight, can be increased for the ditch grade by deepening the ditch toward the outlet.

Size of Tile. The size of tile to be placed in a drain will depend upon a number of factors: (1) the length of the drain; (2) the depth and the distance apart of drains; (3) the fall of the drain; (4) the character of the soil above; (5) the maximum amount of rainfall to be provided for in a given time. The rate at which water will flow in a tile of given diameter, with a given grade, and the amount of water likely to reach the drain in certain extreme circumstances, have been made the subject of careful investigation, so that the following relations may be confidently stated:

A two-inch tile will drain 2 acres, but should not be laid in a drain more than 500 feet long.

A three-inch tile will drain 5 acres, but the drain should not be more than 1,000 feet long.

A four-inch tile will drain 12 acres.

A five-inch tile will drain 20 acres.

A six-inch tile will drain 40 acres.

These rules apply primarily to mains and sub-mains. For laterals, the limits as to length above stated will apply, provided there is good fall. Where the fall is slight, a larger size of tile is to be preferred.

Junctions. Faulty junctions of laterals with mains are the cause of impeding the flow of water in the main, and of lodging silt and finally blocking the drain. It is sometimes best, when the lateral has plenty of fall, to make the junction two inches above the bed of the main. In any event, the junction should not be right angled, but at an angle of 30° preferably. Figs. 11 and 12. The silt basin is a valuable device in draining, and its use and importance cannot be too well understood. It may be used (1) at the junction of two or more drains; (2) in a line of drain, where it is necessary to change the grade from a steeper to a less steep one. The purpose of

the silt basin is to collect silt or mud in a part of the basin below the line of tile, and thus prevent the silt from lodging in the drain and finally blocking the flow. In form the silt basin is a small well, 12 to 24 inches in diameter, extending from twelve inches below the line of tile to the ground surface, where it is provided with a movable cover to allow occasional cleaning. It may be constructed of brick, stone, or plank.



Fig. 11.—Junctions.

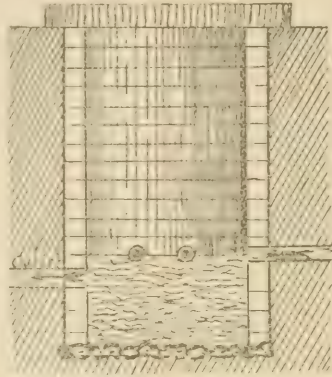


Fig. 12.—Silt Basin.

Surface Drains. For economising land, underdrains are preferable to open drains. But where an outlet has to be provided for a large area, the cost of pipe required to carry the water becomes excessive. It is therefore sometimes advisable to provide an open drain as an outlet for a large area of wet land. The open drain should be made with sloping sides, so that with a depth of 4 feet it should be about 16 feet wide at the top. It is better, further, to have the sides and the edge, some distance back from the top, in grass.

GROWING ALFALFA.

By J. W. CLARK, CAINSVILLE.

There is no crop that should receive more attention among the farmers at the present time than Alfalfa or Lucerne. It is one of the most ancient of forage plants having been cultivated by the Greeks, Romans, and Egyptians before the Christian era. The Spaniards introduced it into South Africa where it was grown a long time, from there it was introduced into California and spread across the territories of the United States, where it still retains the Spanish name of Alfalfa. The same plant coming from parts of Europe, other than from Spain, goes by the name of Lucerne from the valley of Lucerne in Switzerland where it is grown in large quantities.

Lucerne differs somewhat from our other clovers, being a perennial with leaves much smaller and a dark rich color which can easily be distinguished some distance away in a dry season when other vegetation is dried up. The plant has a long tap root which penetrates to some distance in the subsoil. It has been known in a porous subsoil to go down to a depth limited only by the water table. They will penetrate a great depth even in the heaviest clay soil. When the field is broken with the plow, these roots on decaying leave little tube-like openings leading down into the ground

in all directions, which are of considerable value as a means of underdraining and aerating the soil. Again, these roots running so deeply into the soil, are of great value in bringing back to the surface plant food which has been washed down beyond the reach of other plants and they assist in bringing the plant into contact with the subsoil water, thereby facilitating the growth of the crop that follows.

In addition, Lucerne, like other clovers, has the power of assimilating the free nitrogen of the air and storing it in the roots under the surface of the soil. These roots will be found to contain large numbers of knots or nodules which are filled with bacteria. From analysis it has been proven that Lucerne is of higher feeding value for stock than any other fodder. Prof. R. Harcourt of the Ontario Agricultural College, Guelph, says from analysis that Lucerne cut at the blooming stage and aired properly is equal to wheat bran as a food for stock. When this is true, why pay from \$15.00 to \$20.00 per ton for bran, when Lucerne can be grown from which you can get three cuttings a year of from 2 to 3 tons hay per acre from each cutting?

Cultivation. One drawback to Lucerne growing, is the fact that it cannot be put in a rotation of crops on account of the length of time it requires to become established in the soil. It requires about three years before it is at its best. It is most important to have the land well prepared and clean before seeding, so that weeds and grasses will not choke it out before it becomes established in the soil. It will usually remain in the soil under fair conditions from six to twelve years or even longer.

Lucerne will do well on almost any soil that is well drained. It will not remain any great length of time if the water table is near the surface of the soil. It should be seeded in the spring as soon as the land is in shape to work nicely, a late summer fallow or hoed crop being best to seed upon. For that reason it is not wise to seed on fall wheat ground, or rye ground. It should be sown at the rate of from 15 to 20 lbs. per acre and covered with a roller and light harrow. Lucerne can be sown alone or with a nurse crop. Barley sown at the rate of one bushel per acre has given good results. Oats grow more leafy and are taller and shade the young plants too much, while barley ripens much sooner and is off the field and gives the Lucerne a chance to grow. Many failures have resulted in sowing a crop with a seeding of Lucerne too thick. The young plants were kept back for want of sunlight and were very weak, when the crop was removed; consequently the exposure to the hot sun was too sudden a change for the tender Lucerne plants, which perished and the farmer concluded he could not get it to grow on his land.

Good crops have been grown on heavy clay soils as well as on light sand. The latter usually needs manuring well. Better results are usually obtained in sowing the seed alone. In some cases difficulty is experienced in getting a catch on bare heavy clay knolls; but by top dressing with barn yard manure little trouble is usually experienced.

Care of the Crop. The first year is the most critical period in the growth of the Lucerne, and unless on very rich ground, no crop need be expected the first season. During that time, the roots are pushing down deep into the soil so that the plants may be in a position to grow a good crop the second year. If there be considerable growth the crop may be lightly pastured, but not late in the season. Should the soil be very loose or open, a better plan would be to use the mower with the cutter bar raised high so as not to cut too close. Horses and cattle pasturing on Lucerne while the ground is soft and the roots have not got a strong hold of the soil.

will pull a great many plants up. The crop should be at least five or six inches high when it freezes up, so as to protect the roots during the winter.

The second year, three crops can be cut. In some sections the first cutting which is always the largest is cured for hay and the second is left for seed in Ontario, being too valuable to be lost, either as hay or pasture. Good crops of hay and seed cannot usually be grown from the same seedling. For hay it is important to sow seed very thick so as to get a crop of fine stalks which makes much better feed; while for seed, thin seeding is much better as the plants do not want to be crowded. In any section it is only once in five or six years that the season is just right for maturing Lucerne seed of good quality. Some good crops of seed have been harvested from the first cutting where conditions were most favorable. The binder is the best machine for cutting the crop of Lucerne as it can be shocked up and left to cure and is handled easily. As a pasture Lucerne cannot be excelled, as it makes such rapid growth, even through the driest part of the year, but great care should be exercised to see that the plants are kept down and not allowed to get too old and woody or it will not be relished by stock. All stock will do well on Lucerne pasture. Hogs will do exceptionally well and make rapid growth. A good plan is to have two plots near the barn or hog pen where the hogs can run on it and be changed from one plot to the other every two or three weeks as in this way green feed can be kept for them all the season through. Great care should be exercised in pasturing so as not to allow the crown to be eaten off too close, especially late in the fall. Sheep do the greatest damage especially if pasture is scarce or too many are enclosed on a small area. On some soils the stand of Lucerne may deteriorate very rapidly after the fourth or fifth year unless it receives proper attention. It is naturally a strong grower and will hold its own where it has a fair chance. Where for any reason plants have been killed, seed should be sown as soon as possible and the field run over with a disc harrow. A light top dressing with barn yard manure will greatly assist in keeping up the yield.

Caring for Hay. Many farmers have condemned Lucerne as a feed because they did not know how best to handle the crop. It should be cut in the blooming stage. The best time is when it is about one third in bloom while a good plan is to cut in the morning after the dew is nearly dried off. Run the tedder over it about noon and again in the middle of the afternoon; if the day is a fairly good one the hay should be raked up before the dew falls at night, and put in small cocks, even if it seems quite tough and green. If left exposed to the dew over night, spread over the field with the top cured and dry, it will bleach and the leaves will turn white. If raked and cocked up on the green side, little loss will be sustained by the leaves breaking off. These are the most valuable portion of the crop. The cocks should be left standing for two or three days according to the weather and when ready to haul in should be turned out to air and dry for a short time when it can be housed with safety. At no time should it be left till quite dry to handle.

Breaking up the Soil. This has baffled a great many farmers who have tried to break a field standing several years. Some have given it up and said that it was impossible; but they did not go about it in the proper way. The best time to plough a field of Lucerne is in July or August while the land is firm, so that the plough will not shove around the roots. A good plough with wide steel shear is best suited for the work.

It should be drawn out quite thin in the blade before starting. A large mill-saw file should be procured and carried on the plough and when

the shear gets so it does not cut the roots readily, turn the plough over on its side and sharpen the shear. It may be necessary to take it to the blacksmith quite often to get it drawn out, but it will save annoyance and horse flesh. If the field is ploughed about four inches deep so as to cut off the crown of the plant there will be little danger of it coming up again. Many have ploughed Lucerne six or seven inches deep in the fall or spring while the ground was moist and many of the roots would grow up again.

Most farmers have the idea that it is dangerous to pasture stock on Lucerne on account of bloat. I have had cattle and sheep running on it several years, when it was up to their knees and have yet to have a case of severe bloat. It is no more dangerous than any of the other clovers.

CORN FOR THE SILO.

BY J. L. WARREN, ACTON.

Of late years, corn has become one of the most important crops grown on the farm, and we think rightly so, as a larger quantity of excellent food can be grown per acre, than that of any other plant. In our eight years experience in corn growing, we have come to the conclusion, that it is better to plant the varieties that mature early although not producing as many tons to the acre, but having a larger percentage of well matured ears. Well matured corn makes a better quality of food, and will not sour in the silo, like corn cut too green and immature. For a number of years we have sown Edward's Early Yellow, Improved Leaming, and Mammoth Cuban, but last year we found that White Cap, Yellow Dent, or Wisconsin Early did well, ripened earlier, and produced splendid ears.

The great point in growing corn is to have a good seed bed. There is nothing better than clover seed, plowed in the fall, top dressed in the winter or spring with manure, and thoroughly cultivated. If you have a field infested with weeds and thistles, if treated as above described, the weeds will be pretty well killed by the cultivation necessary to produce a good crop of corn. Cultivate as early in the spring as possible; it will help the soil to retain the moisture, and also warm it. We like to sow, if possible, from the twentieth to the twenty-fourth of May, and harvest before the twentieth of September, if it is sufficiently matured, but would rather risk a little frost, than cut and store in the silo too green.

Corn grows rapidly, and requires plenty of heat, sunlight and cultivation. It is very important to test seed before planting, to ascertain the proportion that will germinate, then one can have an idea of the quantity to sow to the acre. Probably the best method to secure good sound seed, is to go through the field, before cutting, and select the best ears, cut, husk and hang up in a dry place, so as to thoroughly dry before the cold weather sets in.

We sow with a 10 hoe drill, using two hoes, the third from each end, and drill the same as if sowing other grain; this will make the rows 35 inches apart. Set the indicator to five pecks to the acre, and by stopping eight hoes, you will sow one peck to the acre, which is quite sufficient, if the grain is good. Harrow soon after planting and again after the young plants appear, with a light harrow, or better with a weeder several times. In this way you will kill a great many weeds just coming through the ground, saving a lot of work later on. When cultivating for the first time,

work as close to the plants as possible, and later, cultivate shallower, so as not to injure or destroy the little roots that spread through the soil. In a dry season, cultivate often, and always after a heavy rain, as soon as the soil is in a fit condition. Working the surface soil well will help it to retain the moisture.

We usually cut the crop with a corn harvester, which we hire for \$1.00 per acre, but if labor was to be had, it would pay to cut with a hoe or sickle, as it could be done for 75c per acre, and save the twine, which costs from 40c to 50c per acre. Another advantage in using the hoe or sickle, is that it can be cut nearer the ground. On the other hand when it is cut and tied in sheaves, it can be handled with two or three men less when the silo is being filled. If the field is convenient to the silo, three teams, three men to help lead, one to help unload, and two in the silo, will handle seven or eight acres in a day.

The ensilage should be well tramped every day for three or four days, and a quantity of oats or barley sown over it, which soon forms a mass of roots, making the silo air tight on the top.

I believe that cement silos are the best and most durable, but, probably, a little more expensive. I would suggest that a beginner, not wishing to go to too much expense, erect a tub, or stave silo. One twelve feet in diameter and thirty feet deep, when full, will feed thirty head of cattle for five months. We have used a wooden silo for eight years, and it is still giving every satisfaction, and as far as we can ascertain, it is just as sound as when erected. It is built as follows:—2x6 hemlock studding set 20 in. apart, lined on the inside with $\frac{1}{2}$ inch elm, then two layers of tar paper, and finished with 1 in. hemlock dressed on one side.

The shorter the ensilage is cut the better, it will go into a smaller space, keep well, and the cattle will eat it all.

THE IMPORTANCE OF SOIL MOISTURE.

BY FRED. A. SHEPPARD, QUEENSTON.

A great deal has been said and written in times past regarding the importance of trying to conserve soil moisture; but it is only within the last few years that any number of our farmers have given the subject the attention it requires.

We have all noticed that during a year when we get an abundance of rain-fall and frequent showers throughout the growing season, we usually have good crops. We have also observed on the other hand, the great loss in crops sustained by our farmers during a season of continued drought.

All plant food should become soluble in water before our plants can make use of it, therefore while the farmer may spend considerable time and take a good deal of trouble in preparing a seed bed, use good clean seed, and apply a good amount of plant food in the way of a fertilizer, still if there is not a sufficient amount of moisture in the soil to dissolve and render soluble this plant food, his labor has been largely in vain.

It is said that all plants require a large amount of water in the soil. Why? (1) Because the structure of the plants is largely made up of water, varying from 60 to 95 per cent. of their weight. (2) There is a considerable giving off of moisture from the leaves all through the growing season. We learn from experiment stations that to produce a ton of dry matter, for

example, in a crop of oats, 522 tons of moisture are required. Having seen the necessity of so large an amount of moisture in the soil, the question arises, where are we to get it from? There are two ways open to us, by means of the natural rain fall, or artificially through irrigation. In a greater part of Ontario irrigation is not practicable. It is also very expensive. I think as a rule we may expect to depend for the present at least, on the natural rain fall for our soil moisture.

In looking over the statistics of the Province we find that the average yearly rainfall for the last twenty years was about 30 inches, giving us sufficient, I think, to ensure a full crop of any of our plants if it had been equally divided over the growing season; but, as a rule, we get most of our rain in the spring and fall. During the hot months of July and August when our crops need it most, we get little rain and a short crop is usually the result. These facts emphasize the necessity of our doing something towards conserving or storing up the moisture that we get in the spring from melting snow and spring rains to retain it so that the plants may use it in time of drought. This has been done successfully by a number of Ontario farmers and also by the farmers in the arid portions of the west where the the rain fall is very much less than it is here. If we are going to store any reserve supply of water, we must have a reservoir; and as we need this water in the soil, the best we can do is to try to make our soil a reservoir. Owing to the adhesive and baking tendencies of many soils, the greater part of the water that falls during the spring rains is carried away by surface drainage and is lost as far as our crops are concerned. This surface flow must be stopped. We must try to get our soil into such a condition that it will absorb and retain this moisture and thus form a reservoir from which the plants can draw later on in the season. This condition may be obtained by underdraining the soil by having in the soil a large amount of humus or decaying vegetable matter, such as farmyard manure; or by plowing in green crops, such as clover, peas, etc.

In order to bring out this point more clearly, it might be well to consider for a moment, the way water exists in the soil, and also the form in which plants take it up. Water exists in the soil in a number of forms. The two that we have to deal with mostly are: free water and capillary water. The free water of the soil is that which we have in our springs, wells, etc. It flows under the influence of gravity. It is most directly beneficial to plants; but is detrimental to them if it rises too near the surface. It keeps the soil cold and excludes the air. The latter is very essential to the roots of growing plants. The free water is valuable, however, as a source from which capillary water is drawn during the very dry time. Capillary water is the chief source from which plants derive their supply. It exists as a film surrounding the soil particles or grains, that is, when the texture is right and the soil grains come in close contact with one another. These films of water have the power of jumping from one grain to another and are being continually drawn to the surface by a source known as capillary attraction. This force, while we cannot see it, is always operating. The moisture from below is being drawn to the surface and is being carried away by the sun and wind. What we want to do is to prevent this moisture from escaping directly at the surface of the soil; but instead make it pass off through the tissue of the plants. Nature's way of preventing the escape of moisture in the forest, that once covered our land, was by a mulch of leaves, which broke the connection between the moist earth underneath and the atmosphere. We all have noticed that if a board becomes partially imbedded in the earth there is always moisture under it, no matter

how dry it may be around it. Some people say the board drew the moisture. The board did not draw the moisture, but simply prevented it from escaping. Now, we cannot have forest conditions in our cultivated fields, neither can we cover them with boards; but we can get fairly good results by using the dry earth as a soil mulch, that is, make the surface of the soil for a depth of two or three inches very fine. By keeping it stirred frequently with a cultivator or harrow, it is easy to prevent the capillary tubes or pores from running to the surface, thus evaporation is curtailed. We all know that if the soil is allowed to become baked or crusted it becomes porous and full of tubes or chimneys through which the moisture from below readily escapes; but if we keep the surface stirred and fine these outlets cannot form and evaporation is materially lessened.

A good example of the importance of soil moisture and the results due to the lack of it, may be seen any day by taking a drive along one of our country roads, and observing the appearance of the farmers' wood lots. In 90 per cent. of the wood lots of Ontario you will find all the larger trees dead or dying in the tops. This is largely due to a shortage of moisture in the soil. Occasionally you find one in which the trees are green and in a good thrifty condition. Now, note the difference in the conditions surrounding these two wood lots. In the one that is green and healthy you will find natural conditions. It has not been grazed by cattle and there is a dense growth of under brush with a heavy mulch of leaves on the ground while everything that the trees take from the soil is being returned to it. The heavy mulch of leaves and under brush helps to keep out the sun and lessens the action of the wind in consuming the soil moisture. In the other wood lot, conditions are very different. The cattle have been turned in and every bit of under growth, that is, all the small trees, are eaten off or broken down. The mulch of leaves has been destroyed; perhaps some grass is growing or has been stirred by the cattle's feet. The wind sweeps through, while the surface of the ground has become hard and packed. When a rain comes, instead of the water sinking into the ground as nature intended it should, it runs away and is lost. The leaves as they fall in the Autumn, instead of remaining on the ground to help keep up the fertility and to hold the moisture, are blown away into gullies and ravines and the result is dead and dying trees in such wood lots.

Applying the principles already outlined, let us get our soils into a condition to absorb and retain a large amount of moisture, when it is available, by lowering the line at which the free water stands to a considerable distance below the surface; also by working into our soils a good supply of humus, as barnyard manure or by plowing under green crops, thus making the soil more like a sponge. Then begin early in the Spring to establish the soil mulch and by frequently stirring of the surface, prevent evaporation. In this manner the soil moisture is stored up until such times as the plants are in need of it.

HORSE BREEDING FOR PROFIT.

By JOHN GARDHOUSE, HIGHFIELD.

There is perhaps as little or even less attention given to horse breeding by the average farmer than to any other branch of his business; and, yet, in the opinion of the writer there is no other line that a farmer on a hundred acre farm can derive more pleasure from and which will give greater returns. Horses are, and have for some time past been, selling for good prices, and the indications are that all the horses that our farmers can raise

will be required at prices that will pay them well provided they raise the right kind. What I mean by "the right kind" is, a first class horse of whatever breed you have a preference for, and that the market demands. It would not do if every person were engaged in breeding one class. We have a market for the heavy draught, carriage, roadster, and saddle horse, and each of these can be bred with profit on our Canadian farms; but, as a farmer, I am compelled to say that the heavy draught horse is the most likely to prove profitable for the average farmer to raise. There are several reasons why I make this statement:

(1) The heavy mare is most suitable for the average work on the farm:

(2) The heavy colt can be broken into work and will earn his keep at a younger age.

(3) The work on the farm is well suited to fit a heavy horse for future usefulness, when sold to go into our large towns and cities for dray purposes.

(4) There are very few farmers that have time and experience to raise more than one out of ten light horses that are really first class, and even then he is not likely to get what it is worth; but some dealer is likely to reap much the greater profit.

If we are going to make a success of raising stock of any kind, we must aim at producing the best. We should first select the very best females we can possibly afford; see that they are a first class type of the breed to which they belong, and that they are bred from good, sound, healthy ancestors, on both sides, then select the very best sire that is to be had. There are three things necessary to success in breeding, and raising live stock:—(1) You must have the animals with the proper breeding; (2) You must have suitable feed; and (3) The animals must be given the proper care and comfort. Any farmer who closely adheres to these three rules is sure to succeed with whatever line of stock he may raise, and it is certain that he cannot make much of a success with stock in any other way. You may buy the very best horse, cow, and sheep or hog that money can buy, take it home, put it in a poor stable, give it little or no care and poor food, and there will be only one result,—the animal will go to pieces. On the other hand, you may grow and cure the very best feed that it is possible to produce and have one of the best stables that is to be found, but if you have animals of poor breeding and undesirable conformation, you cannot make a success; on the other hand your good feed, your fine stable and your time and labor will give you small returns, and only disappointment will follow, as is the result with far too many of our farmers at the present time.

What is wanted in a draught horse is size and quality combined. There are some of our breeders who lose sight of quality in order to get size, and others sacrifice size in order to secure quality; but in order to attain the best results, it is necessary to have a fair amount of both. I always select a horse with a good broad forehead, a bright clear eye, a nicely set ear, broad open jaws set well apart, and not a meaty but a clean cut throat, neck well arched and carried down well into the shoulders, a good depth from bottom of neck to bottom of chest, forelegs well set back under the body and well muscled, chest prominent, broad knee, hard flinty bone, nice silky hair moderately long, sloping pastern, good feet, withers well carried back, good spring of rib, strong back, nicely turned quarters well muscled down: clean, broad, strong hock; a good walker, picking up every foot squarely, and setting it down squarely.

We will take it for granted that you have a good mare and use such a sire as I have described, and that you are producing the feed on your own farm, as all Canadian farmers should.

Then a word about the care: it is a great mistake to overfeed or pamper a horse beyond a certain stage. I believe in always working the brood mare. There is no reason why a mare if properly hitched and properly driven should not work right up to the time of foaling: in fact, I have taken the harness off mares to allow them to foal and have never had a loss by so doing. If the mare is to foal early before grass time, given her a few boiled oats and a liberal supply of bran with a little flax seed occasionally. If she is getting plenty of grass, nothing of this kind will be needed. After foaling, ordinary feed will do,—good oats, bran, and well cured hay. Never allow the foal to follow the mare when working, but keep it in a well built roomy box. Never expect the foal to eat with the mare, but always provide a small box in the opposite corner to feed the foal in. Teach the foal to eat early. A few ground oats and bran with a little milk is a desirable ration. The foal will not take much at first, but will soon show a readiness for hearty meals. In the early part of the season, it will always pay to allow the foal to suck sometime during the forenoon and also in the afternoon, giving the mare a drink and a few oats to eat while the foal is sucking. It will benefit both the mare and the foal. Accustom the colt to being handled by leaving a halter on and occasionally taking hold of it when feeding the mare. Never wean the foal too quickly but by degrees. It is best for both the mare and foal to take two or three weeks to do it. Feed foal often, both during the time of and after weaning. Never allow two foals to feed out of the same box. One is sure sooner or later to become master and secure the lion's share. Give the foal first-class care throughout the winter. Always be careful to give mares plenty of exercise in the late fall and winter after the work on the farm is done.

SMALL FRUITS ON THE FARM.

BY W. F. KYDD, SIMCOE.

The writer has no intention of advising all farmers to grow small fruit, or fruit of any kind to sell, because many farmers are too far from towns or shipping points to make a success of that line of business.

In travelling over Ontario one cannot help being astonished at the great number of farmers who have no fruit of any kind for their own use. Sometimes one hears the remark when the question arises, "We buy what we want." That may be all right for preserving purposes, but of those who buy, how many of them have it on their tables two or three times a day? The family who have no fruit for their own use cannot know what they have missed all the year. The man says, "it is too much bother, I have not time;" let him look at it from another standpoint. How much would it save his wife and daughters. I have heard a woman say, "I am so glad when the fruits are ripe: then I have no more pies and puddings to make for weeks." I have nothing to say against pies and puddings at the season when fruits cannot be got. I am very fond of pies with the beautiful flaky crusts. It is a man's duty to save his wife all he can, for in these days when help is so difficult to procure, it may truly be said she has a great deal of hard work. Could she have a harder or more disagreeable duty than standing over a hot stove in the summer? Farmers if you love your wives and wish to save their complexions, grow fruit: if you wish to reduce your meat account, grow fruit: if you would like a smaller doctor's bill, grow fruit. Most men can be reasoned with if they can be assured that it will be to

their advantage, and there is an advantage in growing fruit. For a very small amount of money one can have fruit in abundance for months. To begin with the strawberry. 200 plants that would cost at most \$1.00 will supply a large family. Plant in as long rows as possible, rows four feet apart; plants about 20 inches apart in the row.

Strawberries are perfect and imperfect in their blossoms. The latter must have perfect varieties planted with them for fertilizing (every fifth row will be sufficient). It is necessary to have both varieties blooming at the same time. The question may be asked, why plant an imperfect variety and have all that trouble? The reason is as a rule that the imperfect varieties produce much larger crops, but there are many kinds with perfect blossoms that bear good crops and I advise you to plant a perfect variety.

Plant as soon in the spring as large plants can be secured, but insist on getting plants that never bore fruit, preferably take them out of an old patch. Cut off all blossoms the season plants are set out. If this is not done the strength will go to perfect and mature the fruit, and the plant will make a small sickly plant that season. Put out a new patch every spring, as it will take far less time than cleaning the old one. When the ground is frozen in the fall, spread leaves over the plants (put on thin, this will prevent freezing and thawing in the spring). When straw is thawed (after danger of frost is past) rake it off plants and leave between rows. This will keep berries clean if there should be heavy rains when berries are ripening, for the fruit part is usually on the outside of the row.

The most fruit will be in the raspberry, both red and black should be grown. 25 of each variety will be enough, costing about 8c each. Plant rows of red variety seven feet apart and three feet apart in row; black, four feet apart in row. All fruit growers do not agree about the pruning of raspberry canes, but in such a small number as the above, I would advise pruning out the terminal bud when spring growth is about twenty inches in height. By so doing, the canes will branch out to be strong and stocky. If pruning is not done at that height, leave canes till spring, then cut off four feet high, at the same time taking out all old wood. Four or five canes are enough to leave to each bush. Following the raspberry comes the blackberry. 30 or 40 will be sufficient, costing about same as raspberries. Plant 8 feet apart and four feet in the row. Prune same as raspberries.

These three varieties of fruit will continue in an ordinary season over two months. The most important thing in growing fruit of any kind is clean cultivation. Above all things else never allow grass to start in your raspberry or blackberry beds. They should live six or seven years, but if once grass gets started it is next to impossible to clean it out.

I have not mentioned any varieties, for the reason that what suits one locality might not suit another locality. I have several times tried some varieties that gave the best of satisfaction a distance from here, that were no good to me.

Get the kind that does with your neighbor, good strong plants, keep them clean and your small fruit garden will be a great pleasure to yourself, a saving to your wife and a joy to your family.

THE FRUIT AND VEGETABLE GARDEN.

BY J. L. HILBORN, LEAMINGTON.

I continually notice, go where I may in any locality, what to me seems a great lack of interest or knowledge in reference to the family garden.

This is apparent, as a rule, even among the best farmers: men who are among the leaders in agricultural pursuits and who have excellent judgment and management in other matters, are often sadly neglectful or ignorant of how best to handle the garden.

The old system of planting most vegetables in raised beds as our grandmothers did is still practised by many, but is far too expensive and tedious an operation to be desirable on the farm. While it may still be practised to advantage in small gardens, if the land is very flat and wet, I would not think of trying it under any other conditions.

Even for the small garden in village or town that is worked entirely by hand, I can see no excuse for the small raised beds, and am convinced much better results can be attained if level culture is practised.

Judging from what one can see in going about the country, many farmers appear to think that the garden is only a place for the women to fool around in and grow something if they can, and that it does not concern them, as they have no time to bother with it; while the fact is that, if the labor is intelligently applied, no work about the farm will yield as much profit and pleasure as that applied to the garden.

On the farm, even if it be small, there should always be a small portion convenient to the buildings set aside as a place to grow all the small fruit and vegetables that the family can consume in a year. As this will be far the most profitable spot on the farm even from a financial standpoint, it should be well drained and well fitted up.

Select a piece that is eight or ten rods in length, so that it will be convenient to work with a horse. Get it well tilled early in the spring, and begin planting at one side with a row of blackberries; the Snyder is the best for this purpose of any variety that I have tried. It is smaller than some of the others, but it is sweet and hardy, and will succeed where many others fail.

Next plant a row of red raspberries, if you like them, (or, if the family is small, half a row might be sufficient) of an early sort, the other half of a late kind so as to lengthen the season. Turner, Brandywine and Marlboro are all good early sorts, while Cuthbert is the best late variety. A few bushes of Golden Queen will produce fine large berries like the Cuthbert, only yellow in color. These are very attractive when mixed with the red and used in their raw state.

We much prefer the black raspberries, chiefly because they are more wholesome. Plant two rows of these, including three varieties, to make a long season. Palmer for first early, Hilborn for medium, and Gregg for late.

Next to these plant a row made up of different varieties of currants and gooseberries, if you like them, and last, but not least, of the berries, one row of strawberries. For these I prefer to mix three or four varieties together, early, medium, and late sorts, this will give a better yield and a longer season. Beder Wood, Bubach, Sharpless and Williams are excellent sorts. In clay soil I would plant Captain Jack instead of Bubach.

The rows of berries should not be less than six feet apart and about three and a half feet in rows, strawberries about two feet apart in row.

The cane berries will last for eight or ten years, if properly attended to. The strawberries should be replanted every two years. This is why I advise planting the patch close to the vegetable garden, as it can be changed among the vegetables when necessary to replant.

We always plant our vegetables beside the berry garden for convenience in cultivation, and, for the same reason, we run the rows right through the entire length of garden.

We plant the first two rows of vegetables one foot apart, then allow a space of three feet for cultivation, then two more rows one foot apart, another three foot space, and so on until all are planted.

We grow everything we want in the garden in this way, onions, lettuce, beets, parsnips, carrots, etc. If we do not want a full row of one kind we put two or more in one row. Plant several rows of good garden peas, early, medium, and late. I also grow one row of sweet potatoes, and several rows of Irish potatoes for early use, also a few rows of early, medium, and late sweet corn.

I put in the seed for the small vegetables very quickly by using a line the length of the garden. Make a marker by using a three-sided stick of about twelve inches long and three inches wide on either side. Take an axe and dress one end the shape of a sleighrunner, bore an inch hole in the other end in a slanting direction so that you can insert a handle that will allow you to walk upright, pushing the marker ahead of you and under the line as fast as you walk, making the mark deep or shallow as you want it for the different seeds; drop your seeds in this and cover with back of hoe.

If the land is well fitted, you will be surprised how quickly you can put in your garden in this way. A handy person can plant the whole list in two or three hours, and when it is put in, in this shape, it requires very little time to run through it with the horse and cultivator once every week. If this is done very little hand work is necessary, and excellent results will be attained.

If the spaces between the rows are kept well cultivated, neither drought nor weeds cause any check. One who has never tried this system will be surprised at the quantity and quality that can be produced for the amount of labor applied, and, also, at the improvement it makes in the bill of fare, to have an abundance of fresh vegetables and small fruits always on hand. Think also of the great saving in the grocer's and butcher's bills.

I have practised this system just about as outlined for many years, and know whereof I speak, and am convinced that any family, which has not in the past kept their table well supplied with fruits and vegetables grown in this way, will be delighted with results, if this method is adopted and well carried out.

WAYS AND MEANS OF CONTROLLING INSECT LIFE.

By W. E. A. PEER, FREEMAN.

In the days of our ancestors, the growing of fruit and vegetables was attended with different results to that pertaining to the industry at the present time. In those early days the destruction by insect pests and fungous diseases was so insignificant that little attention was bestowed upon them. But times have changed. With the increasing importance of this industry as it becomes established in our midst, the more prevalent will

become the pests that prey upon it, and the greater the need for an active interest in their control by all concerned.

Before entering upon a discussion of the details of insect life and its destruction, it is my intention to point the finger of alarm at the increasing depredations that are being worked by our tiny foes, and to establish a foundation or starting point upon which we may construct ways and means for controlling the various forms of insect life with which we may have to deal.

If the ravages of our insect pests go on unchecked, the greater proportion of loss will fall upon the young and rising agriculturist of this country. Upon the young men of this land, whose life, from an agricultural standpoint, still lies before them, the blunt of this unfortunate condition will fall, and, if they do not arouse themselves to a knowledge of these conditions and what the results may be, they will in after years rue these lost opportunities. I once heard the president of a Farmers' Institute make the statement that had he, when setting out in life, obtained the information that he has of late years gathered through the medium of Farmers' Institute work, it would have been worth thousands of dollars to him. If that was true of his life, may it not be so with ours? We are acquainted with the fact that insect pests are playing an important part in the economy and profits of all pertaining to the farm. Knowing this, are we going to calmly submit to this loss and be participants in the crime of neglect and indifference exhibited on every hand, which is aiding in the devastating career of the insect world, that is working such destruction in our fields and orchards, our buildings and our homes?

How often do we stop to think about and realize how great the drain is upon us, by these parasites upon our crops? Entomologists tell us that the annual loss in the United States from insect and fungous pests amounts to about one-half a billion dollars, that the annual tribute collected by these tax gatherers is often ten per cent. or more of the crop products of our soil. We have seen the thousands of bushels of apples that annually go into the evaporator and cider mills, rendered unfit for a superior market, owing to the presence of a worm hole or a spot. We have seen a tract of country made useless for the production of certain crops by the presence of some pest, such as Southern Ontario experienced during the past few years in the loss of her pea industry on account of the presence of the pea weevil. With these facts before us, and others that might be mentioned, does it not become us as farmers and farmers' sons to take an interest in the entomological conditions surrounding us. Under these prevailing circumstances it is necessary that we make ourselves masters of all knowledge likely to aid us in carrying on a systematic and successful warfare against these parasites on our future prosperity. To carry on this warfare successfully we must have a general knowledge of the life history of the insects we wish to overcome. This knowledge will enable us to ascertain its vulnerable points so that we may attack it accordingly.

As we proceed to study the insect world with a view to discovering ways and means for their control, we find that we have two distinct classes to deal with. First, we have that class known as injurious insects on account of the scourge they are to the agriculturist in the devastating of his crops. For the second class we have the beneficial insects, so called on account of their predacious or parasitic habit of living upon the insects of the injurious class. From this it will be seen that in dealing with the control of our insect enemies we have one class of insects to shield and another to fight.

In fighting the injurious class we will find that a knowledge of their life history and habits will help us materially in our work. We will discover that the injurious insects are also divided into two classes, first, those that bite or eat their food, and second, those that suck or draw their nourishment from the interior of the plant. Realizing the difference between these two classes, one will conclude that widely different methods for their destruction must be adopted. For the control of the former, one would naturally infer that spraying poisonous substances on the foliage or whatever the insect feeds upon would have satisfactory results. If the work is properly done at the right time this may be the case, but such a method would have no effect in checking the ravages of sucking insects such as the aphid or San Jose scale, which are doing so much damage in some parts of our Province. I have known men condemn spraying as entirely useless and a waste of time and energy because they could not destroy the aphid on their cherry trees by continuous applications of Paris green. The reason this class of insects cannot be destroyed in this manner is because they draw their nourishment from the interior of the plant, and, consequently, do not get any of the poison placed upon the surface. In order to combat this class of insects successfully we have got to adopt some method that will kill them by merely coming in contact with their bodies. This may be done by spraying with kerosene emulsion, whale oil soap, lime, salt and sulphur solution, or other solutions that are constantly coming into use.

As we go deeper into the study of insect life, we learn that there are stages in their life cycle in which they are immune or unharmed by treatment that would be fatal to them in another stage. For example, we will take two very common pests infesting the orchards throughout this province, the curculio and codling moth. The curculio passes the winter as a perfect insect, and when spring weather comes it feeds upon the young buds and tender leaves as they are unfolding, until the fruit, especially that of the plum, is large enough for it to deposit its eggs therein. The larva, after hatching, proceeds to burrow its way into the heart of the fruit, being at no stage of its development within reach of any poison the orchardist may apply. To combat this pest successfully we must carry on our spraying operations when the perfect insect is feeding on the tender leaves at the opening of the season. The codling moth passes the winter in the pupa state. When spring opens, the moth develops and lays its eggs upon the surface of the little apples that are just beginning to grow. When these eggs hatch the larva enters the apple at the calyx end and proceeds to burrow its way into the core. If poison is present in the calyx tube the larva gets a taste of it as it is about to commence its work of destruction. From these it will be seen that a knowledge of the life history of an insect is necessary in order to know at what stage of its development remedial measures will be most effective.

We have the insects working destruction all about us, and the first step, and an important one, will be obtaining a knowledge of their life history; knowing this, ways and means will present themselves for keeping them in check.

The systems whereby insects and fungous diseases are controlled may be roughly classified under five heads, namely, good agricultural methods, natural enemies, mechanical devices, spraying and fumigation. A careful study of these methods and their practical application will, in the majority of cases, reduce the loss we often sustain from the various pests to a minimum.

Under the head of good agricultural methods, a great many features that wield an influence in the control of insect pests and fungous diseases are worthy of attention. Perhaps the most important feature is that of thorough and clean cultivation and care of our individual places. The removing and destroying of all rubbish and worn-out or useless products will do much to facilitate the control of our enemies. When a crop has been harvested, such as tomatoes, potatoes and the like, the dead tops and vines should be collected and burned or otherwise properly disposed of in order to get rid of the insect life they may contain, or the spores of fungus diseases with which they may be contaminated. At this point it might be well to say a word in regard to worn-out trees and plants such as old, dead and decaying orchards and berry or currant bushes that are past their stage of usefulness. Along with these might be included worthless seedling trees growing in fence corners or out-of-the-way places where we do not consider them worthy of improvement by budding or grafting, or are not inclined to bestow the necessary attention upon them to insure their freedom from insect and fungus attacks. The experience of the last few years makes us realize that the time has come when we have got to fight our insect and fungous pests if we are going to rank as successful fruit growers. This warfare will require a considerable expenditure of money for labor and material. We cannot afford to utilize our energy and material spraying worthless plants. We cannot afford to jeopardize our sprayed and valuable orchards by allowing the worthless and unprofitable kinds to go unsprayed. What is to be done? We must get rid of them, destroy them root and branch, and thus get rid of a breeding ground for undesirable parasites upon our crops. I had the importance of this impressed upon me last autumn during a visit to two San Jose infested districts in this Province. In one locality I saw clumps of scrub apple trees and suckers growing along the roadside. These scrubs of trees were utterly worthless and neglected, and, upon examination, revealed the fact that they were thoroughly encrusted with San Jose scale, while across the road on the adjoining farm was to be seen one of the leading commercial apple orchards of that section in danger of infestation, if not already infested with scale from these apple suckers, that were of no value and should not be allowed to exist. Another instance that came under my notice was that of an orchard that has been sprayed faithfully for the last four years in an endeavor to rid it of that most undesirable pest, the San Jose scale. Upon examination last November many of the trees throughout this orchard presented more or less scale, in fact, more scale than has been apparent for some time. Owing to the thoroughness with which the spraying had been done, it was hard to account for so many living scale. Upon investigation it was discovered that there was a row of old currant bushes growing alongside an old fence that surrounded the orchard. Between this fence and the first row of trees in the orchard was a permanent water course. The bushes were growing on the narrow strip of land, between the ditch and fence. They were old and neglected, almost smothered out in grass and weeds, and, undoubtedly, worthless. These were found to be one seething mass of scale, and were, undoubtedly, the means of reinfesting the orchard in which so much pains had been taken to exterminate the scale. This might have been done, had those currant bushes been removed as soon as their day of usefulness was over, and not left to become a curse to the owner and adjoining neighborhood.

The prompt removal of unprofitable trees and worthless or worn-out plants and bushes is not the only feature in connection with good agricul-

tural methods that has its influence in controlling the insect and fungus attacks upon our crops. Nearly everything we do in the proper working of our places will retard in some measure the spread of some pest with which we have to deal. By properly fertilizing our land, we encourage a vigorous and healthy growth of plant which assists it in overcoming or resisting the attack of insects or disease. By the proper rotation of crops we often evade the attack of some pest that might cause us severe loss, should we plant the same crop or a similar one upon the same location two or more years in succession.

The utilizing of the natural enemies of our insect pests is a method over which the individual grower has little control. This is a part of the important work that falls to the lot of the professional entomologists. They can, by careful attention to this question, discover and introduce beneficial insects of one section into another, or from one country to another when they are needed. This has frequently been done with excellent results, and leading entomologists are now investigating along this line regarding the San Jose scale, and I am sure we all wish them unbounded success. Although the average farmer or fruit grower has little control over the beneficial insects, he has, nevertheless, had much to do in encouraging, or, at least, allowing the wholesale slaughter of many of his best insect destroyers, the birds. It is in the interests of every one to discourage the worse than useless slaughter of these innocent creatures that are capable of consuming daily more than their own weight of insect life in its different stages.

The mechanical devices for controlling insect life are almost as numerous as the pests themselves. Almost every insect with which we have to deal is capable of being excluded or entrapped at some stage of its existence.

The great factor in the control of our insect pests and fungous diseases lies in the use of a good spray pump and suitable material. If the work is properly done this is often the quickest and most reliable way of combating them. The great trouble is that many do not like the job. It requires to be done when there is much other important work on hand. In a great many instances it is put off from day to day, or only partially done, and thus the chances of destroying or reducing the numbers of the pests by efficient and united action throughout the community are lost. I believe the greatest success in fighting our insect pests and fungous diseases will be obtained when the spraying of our orchards in particular, and other crops, if possible, is placed upon the same basis as that whereby much of our threshing, feed-cutting or corn harvesting is done. When we are prepared to engage the services of experienced men properly provided with power-spraying outfits, and with no other irons in the fire to distract their attention, then, and then only, will the bulk of our spraying be done efficiently and thoroughly enough to obtain the desired results.

THE FARM WATER SUPPLY.

By R. S. STEVENSON, ANCASTER.

The subject of this paper is one of the most important, and I may say one of the most neglected, on very many of our farms. To those of us who value our own health and that of our families, to those who would have strong and healthy animals, and, above all, who would have a supply of pure and wholesome milk, I would say that without having drinking water of

the purest kind, none of these blessings can be enjoyed. Although people might use unwholesome water for some time without apparently any bad effects, still as soon as the conditions were right, disease, most likely typhoid or dysentery, will break out. It is well known that the first mentioned disease is most frequently contracted from drinking water or milk in which the bacillus of typhoid exists. Milk is one of the most common sources of infection; it, therefore, becomes necessary to supply our cows with good wholesome water, otherwise, how can we expect them to give us wholesome milk.—in fact it is criminal to allow dairy cows, especially those producing milk for consumption in our cities and towns, to drink from filthy, stagnant, scum-covered pools that are reeking with disease germs. We have all seen this condition in many places. There is no machinery in the internal economy of the cow to eliminate the disease germs that she is often forced to swallow in her drinking water.

In most places in Ontario, we are blessed with water of the greatest purity, but unfortunately from the location of many farm wells, the water, though naturally pure and wholesome, has become contaminated, in most instances by the drainage from the farm yard or house.

It has been the common practice to locate the well where it will be most convenient, without giving any attention to the danger of its becoming contaminated from outside sources. Now if a well is placed in or near a barnyard it is only a question of time before it will become polluted, such time depending upon the nature of the soil to a great extent. A well in which a sudden rise of water takes place after a rain should be regarded with the greatest suspicion, as there are only two causes to which we can attribute the sudden rise, either the surface water has run in over the top, or else it has passed very rapidly down through the soil, both equally bad if surroundings of that well are not what they should be.

For a number of years at the Central Experimental Farm, Ottawa, they have been making analysis of water from different places throughout Canada, and it has been found that in a large percentage of cases the water was wholly unfit for use and in some cases it was pronounced absolutely dangerous. Now we must remember that in most cases where people sent water for analysis, they had some suspicion that it was not wholesome, either from the taste or the smell, but it was found that some of the clearest and most sparkling samples were the most contaminated, so it is impossible to tell, by the taste or smell of water, whether it is pure or not.

The first essential is to procure pure water for our farms and the second is to keep it from becoming contaminated. Therefore, in locating a new well, place it at a safe distance from the barnyard, and have it pumped by means of a small windmill and forced to the barn or house. This can be arranged at a comparatively small cost, and it will be found to be one of the greatest comforts on the farm, not only from a sanitary point of view but also as a great saving of labor. Another method of getting a water supply, of which many farmers might avail, themselves is by means of an hydraulic ram. Any one who has a spring with a fall within a reasonable distance, can have a ram installed and force the water a long distance, and also raise it a considerable height depending on the fall at the spring. The writer has had one in operation for nearly twenty-five years and during that time it has cost practically nothing for repairs. This is the best method of getting a water supply, where there is a suitable spring. In my own case the ram raises the water one hundred and twenty feet high and sends it fifteen hundred feet distant, while the cost without digging the trench for the pipe was one hundred and thirty dollars.

When we have secured a supply of water by any means, it will always pay to have it in front of our cattle during the time they are stabled. There are several ways of doing this, but they all require a tank of some kind to hold a supply of water and also to force the water into the drinking basins or troughs. In my own case we built a tank of cement and made it high enough to run water into the drinking troughs, which are wooden, lined with galvanized iron, and cost for the lining 12c a foot. They are nine inches wide and oval in shape. The troughs are placed above the manger so that the cattle can reach them and are filled by taps at the end. The advantage of the troughs, is that they are easily cleaned, and are very much cheaper than the iron basins. I may say this arrangement has given us perfect satisfaction. A wooden tank could be suspended from the ceiling of the stable which would give the pressure to fill the troughs, if preferred to a cement tank built up from the floor. The water troughs could also be placed at the back of the manger; but in that case they would have to be covered. The advantage of having the water in front of the cattle is undoubted. I may add in conclusion that it will pay any farmer to make reasonable outlay, in order to procure a good and convenient water supply, more so than money expended in any other way.

THE FARM HOME SURROUNDINGS.

BY T. H. RACE MITCHELL.

Horace Greeley was considerably in advance of his time when he lived and wrote of the advantage and attractions of farm life. In the days of Greeley the chief aim of the average American farmer was to raise pork and beans. In the raising of pork, the corn crop came in and the average farmer's attention was divided between his corn lot, his bean crop, and his hog run.

The farm home was quite a secondary consideration with him. His family had the wood pile, the back garden fence, with perhaps a few hollyhocks growing beside it, and probably a few front ties, by way of useful ornamentation; and with these they were generally left to themselves to make the best of life while he, himself, gave the larger portion of his attention to the things that brought him returns in the market.

When Horace Greeley wrote that splendid essay on farm life, concluding with the words, "the best investment that a farmer can make for his family is that which surrounds their youth with the rational delights of a beautiful and attractive home," all the "practician" and real "knowing ones" who grew corn and beans and raised hogs called him a theorist farmer and made common jest of his notions. But Greeley went further; he said, "there is no money spent upon the farm that is so profitable as that which makes the wife and family fond and proud of their home." From the standpoint of to-day with its comfortable and attractive farm homes there are few farmers but will say that Greeley was right; and what might have been looked upon as a theory in his time has become a practiced reality to-day. The home where a farmer raises his family has become of greater interest and importance to him than the run where he feeds and fattens his hogs.

How has this marked change been brought about? Largely through the instrumentality of the agricultural journal, the Farmers' Institute, and the Agricultural College; in brief, through education.

The spirit of the latter years of the nineteenth century realized that it was the manhood and the womanhood that gave character to the nation, and not the hog products, nor the products of the field. Now, we are told in divine revelation that man is a product of the dust, the clay in common with the hog and the corn crop, and like them his highest maturity depends upon the conditions surrounding and affecting him in the course of his development. Man is lifted higher and nearer to his Creator by touching the divine instincts within him. His highest quality of manhood is developed by touching the finer human attributes within his being. Hence the philosophy of Greeley surround him in his childhood with the rational delights of a beauteous and attractive home.

Why is it that nearly every child is born with a natural love of flowers? Why do they take such a natural delight in running off to the hill-sides or the woodlands to gather wild flowers to gratify the love? The child goes to the cupboard to gratify the desires of his stomach; an appetite necessary to the development of his physical being. We send our child to a music teacher to develop his musical faculty or instinct. Not that it means any material profit to us or to him either, but because it adds culture to his general character, and makes for the development of his better nature and higher manhood. But it is not every child that has the musical gift or instinct to develop, while almost all children have the natural love of flowers, or love for the beautiful in nature within them, and they go to gather wild flowers with the same natural impulse that they go to the cupboard. In the one case they go to gratify the desire of their stomachs, in the other the finer instinct, the love of the beautiful in nature; and the constant and repeated gratification of which will just as surely tend to the development of the higher and finer nature.

Then why should we not provide the rational delights of "a beauteous and attractive home" for the one object, as we provide the cupboard for the other? Why should we not surround our homes with flowers, and shrubs, and plants and a green lawn, so that our children may find the gratification that they naturally hunger for, instead of having to go to the woodlands or to the mountain tops?

Horace Greeley was just as sound in his philosophy when he said "there is no money spent upon the farm as profitable as that which makes the children proud and fond of their home." There is no higher order of patriotism to be found in the world than that which felt its first impulses in the love of home. Teach a child to love his home first and he will as surely grow up to love his country. And just in proportion as you surround the home with the things that touch and delight the better instincts of the child, so will his attachment grow.

Tennyson says there is an influence in every budding flower. Wordsworth tells us that he was wont to hold restful intercourse with the quiet hedgerows. Bryant says, "to him who in the love of nature holds communion with her visible forms she speaks in various languages." Who can doubt this? What are the visible forms of nature but the flowers, the shrubs, plants, trees, green grass, and such like that everywhere surrounds us. That they have a voice for us, if we love them, and an influence over us, we surely have all felt the truth. Gladstone tells us that there was a divinity to him in every blooming rose, that in every open flower he saw an eye of the invisible. What wonder, then, that the average farm home, all over this Province of ours, has improved so much during the past ten years? What wonder that the average farmer's family is no longer distinct from the family of the merchant or professional man in the town or city? The Agricultural

College has been disseminating the philosophy of Horace Greeley. The Farmers' Institute has been doing its great missionary work. The farm under the new and more enlightened methods of cultivation, has improved in all its departments and in the quantity and quality of its products. The farm home has been surrounded by the visible forms of nature, and these influences have been felt to the betterment of life upon the farm. And today the typical farm home in Canada is a spot of comfort and contentment, attractive in its surroundings and cultured in its domestic economy. And all this as the result of a well organized, diversified and well directed system of education.

THE GROWING OF TIMOTHY, ALSIKE AND RED CLOVER FOR SEED PURPOSES.

BY SIMPSON RENNIE, TORONTO.

Since the Seed Bill which was before the House for some time has now become law, it should be the aim of every grower to try and improve as far as possible the present existing condition of the seed trade, which has been going from bad to worse until now scarcely a sample can be obtained that would class No. 1. So many are the varieties of weeds growing up in the clovers intended for seed, especially the alsike, that nearly one-half of the fields should be cut early and made into hay. If allowed to ripen and threshed the seed is found to be almost unsaleable.

However, farmers, even on dirty farms, should not be discouraged, for by applying proper methods, weedy land can be made to produce profitable crops of timothy and clover seed.

I do not approve of seeding with fall wheat, for should there be weed seeds in the land, all biennials especially, have a chance to produce their seed; but, on the other hand, if seeding with seed grain (barley is the best), no biennial weeds can exist the first year at least. Therefore they could not produce and shed seed as would be the case if seeding is done with fall wheat. I know of no better preparation of land for seeding down than well cultivated root or rape crop, for by the constant stirring of the soil all weed seeds within germinating distance from the surface would be destroyed. Where land intended for rape has been weedy, it is better to work the land as if for roots and sow the rape on the level about the end of July and use about five or six pounds of seed per acre. This should in a short time cover the ground with a strong growth of plant food which should be cut about the end of October, using a mowing machine with the out end divider removed so that the rape will fall all evenly over the land.

Returning again to the root crop, and keeping before us the preparation of the land for growing pure timothy and clover seed, the root drills should be shallow, so as not to interfere with the light plowing which should be given after the root crop is removed. I consider the tops from turnips, mangels and other roots of more value as plant food if plowed into the land than any value derived from feeding stock. After the rape is mown down and the tops from all varieties of field roots are spread evenly, plow the whole field not more than three inches deep, using a revolving coulter. Do not plow deep and so turn up another layer of weed seeds after going to the trouble of cleaning the surface.

As already stated, I prefer to seed down with barley, and the earlier sown the better, if the land is dry. The roots will then get a stronger hold of the ground by the fall. Timothy intended for seed should not be sown

very thick. It will do well to sow with red clover, say from four to five pounds to the acre, and keep the second or third crop for seed. This can be cut with the binder and it will thresh all the better if a rain falls while it is in the stook. When once one gets the clover fields fairly free from weeds it is wise to go through and pull or top any weeds that would likely go to seed.

I will say before closing that farmers should be very careful in buying seed, especially if it is intended to produce good pure marketable seed. Do not pass by a first-class sample if it is held somewhat higher than other samples which are not pure.

CARE OF THE BROOD MARE AND HER FOAL.

By DR. H. G. REED, GEORGETOWN.

In the winter care of brood mares there are two things I wish to emphasize as being of prime importance, viz., generous feeding and regular exercise.

When we consider that the mare is developing in her own system the young animal we can easily see the importance of good food, and, as clover hay and oats contain in larger proportions than any other foods, the ingredients necessary for the building up of the system and the animal tissue, they should be the foundation of the animal's diet, supplemented by a little bran, some roots or other such foods as the convenience or tastes of the owner may dictate.

Next to good food (and probably of equal importance) is regular exercise, and there are two reasons why exercise is so essential. In the first place it is not safe to feed any animal (whether a brood mare or otherwise) an abundance of nourishing food without the exercise, or we are almost sure to meet with some form of disease, and in the second place, the fact that the mare is regularly exercised keeps her own system in prime condition, and thus, to a great extent, ensures a strong and vigorous foal at birth. In a majority of cases weakly foals are the produce of mares that (although they may be fat and strong looking) are very much out of condition from want of proper food and regular and sufficient exercise.

The mare that has done any kind of reasonable light work right up to the time of foaling is more likely to produce a vigorous foal than one that has stood in the stable and had little or no exercise during her months of pregnancy.

The careful farmer will keep watch on his mare when her time has expired in order to be in a position to render any assistance which may be required. Some mares prefer to be alone, and, in that case, the watchers should be out of sight, but still near enough to be ready with assistance if necessary.

Sometimes the foal is born enveloped in the foetal membranes, which, of course, have to be broken or the creature will soon smother. If the navel strings have not been broken they should be cut about five or six inches from the body of the foal, but not until a good strong string has been tied tightly around them to prevent bleeding.

Sometimes a little trouble is experienced with young and nervous mares in starting the foal to suck, but a little patience and kindness on the part of the attendant usually overcomes that difficulty.

If the foal at birth is strong and healthy it is best to leave it alone. Many farmers are in the habit of giving it a dose of oil, whether the animal

needs it or not, and many a foal has been injured, and, in some instances, killed by this foolish practice. If constipated an injection of oil or warm water will in most cases relieve the trouble without any dosing at all.

In cases where the foal has to be fed on cow's milk owing to death of dam, or other causes, it should be reduced one-third with water and a little sugar added, and the foal should be fed every two hours for the first few weeks. As a precaution against the disease known to farmers as "foal ill," the navel should be seared over with a little oil to which a few drops of carbolic acid have been added. This is a germ disease and it is thought that the germ gains entrance to the system through the navel opening, hence the treatment recommended. This has been largely practised in some localities where the disease has been noticed and with very satisfactory results. Of course it is not curative treatment, but used only as a means of prevention.

If we want to give the foal the best possible chance, the mare should not be worked during the nursing season, but many good foals are reared while their dams are working every day. I consider every mare should have a month's rest after foaling, and when she is put to work, the foal should be kept in the stable during the hours its dam is at work and not allowed to follow her around at her daily task.

GROWING LAMBS FOR PROFIT.

By JOHN CAMPBELL, WOODVILLE.

There is now no dyspepsia in the sheep business. A good healthy appetite for sheep is springing up all over the continent. Never in our country's history has the sheep claimed such universal attention. Let us look at the following statement, made in the summer of 1905 from America's leading market:—

Farmers Clamor for Ewes.

"Michigan, Indiana, Illinois, Ohio and Wisconsin are anxious to stock up with sheep. Farmers in these states are mailing and wiring orders to Chicago for breeding ewes, and there is little prospect of meeting the demand. Buyers are willing to pay \$4.50 and \$5.00 for the same kind of ewes that were hard to sell at \$3.00 to \$3.50 a year ago, and even then demand was considered good. The prospect for sheep and wool fully justifies farmers in paying \$5.00 per cwt. for good breeding ewes, said an experienced sheepman. They are worth more than that to any man who is prepared to take care of them. Next year we will have a better demand for lambs than this season, and wool is not going to sell any lower."

Need we wonder at the increased demand when we have such reports as this from men who have tested the business for themselves?

Very Profitable Ewe.

"A 140 pound ewe was marketed at Chicago last week that earned over 400 per cent. on its original cost in a year. This sounds like a get rich quick story, but it is simply a recital of cold facts. The owner, an Illinois farmer, contemplated filling his feed lots with sheep last fall, but balked at prices, contenting himself with taking home this ewe, which cost him \$3.00. He received twenty-five cents a pound for her fleece, sold her lamb, when three months old and weighing 90 pounds at eight cents per pound, and finally sold the original ewe at \$4.50 per cwt. He received \$2.50 for the fleece, \$7.20 for the lamb, and \$6.30 for the ewe; total \$16.00, against an investment of \$3.00. And the man who did this expressed his opinion that he could have handled a flock of one hundred with equally satisfactory results."

In case any skeptical reader should question the accuracy of such a statement, the writer may be allowed to give a bit of his own experience. In 1897 he imported one of the best Shropshire ewe lambs to be found in England, the pick of the best pen of five shown that year. She produced in six years thirteen living lambs, many of them first and champion prize winners. Up to the fall of 1904, in sales, her own winnings in Canada, and her offsprings' winnings in Canada and the States, realized \$880.00 in cash. At the same time, seven daughters and four granddaughters were retained in the flock, and the now eight year old dam, is as fresh looking as a two-shear. So far as present prospects indicate the future course of things, growing lambs in general cannot for some years fail in being a profitable business. But in the sheep industry, as in other lines of agriculture, there is a good and a better way of going about it, and the best way is not too good for any one. It is in the good animal well prepared for the market that we invariably find our greatest profit. Such animals are a source of pleasure to the eye, as well as a stimulant to the mind. Who ever saw a man showing satisfaction, when around his farm with a friend, with only mongrel-bred and poorly fed animals in sight? Who could, with such to offer a dealer, have the assurance to ask for the top market price? To have the lamb which will return the largest profit, be the market firm or dull, he must be bred for the purpose, along the right lines, and so cared for, that every day of his life, a steady increase in growth and flesh is maintained. From the writer's experiences and observations at fat stock and other shows in Canada and the United States, the lamb which led, and that strongly, in grade classes for twelve or fifteen years past, had a long woolled mother, and for sire, a down, usually a Shropshire. A most notable exception was a pen of lambs, exhibited by the Wisconsin Agricultural College at the International, Chicago, a few years ago, a pen of five, remarkable for beauty of form and good quality. They were sired by a Southdown ram, and out of western range ewes, and of no visible line of breeding. Such evidences have led to a good strong belief that a good ewe of most any kind of grade coupled with a compact medium sized Shropshire ram, having a well covered back and a good full leg of mutton and *big in his points*, can produce the lamb we are after.

That lambs should be dropped about the time of the first grass when, so born, with the ewe on grass, the youngsters grow and thrive with comparatively little trouble, and expense. Tails should be docked at seven to ten days from birth, leaving a stump of not more than an inch. Such lambs should be castrated when three weeks old. The neglect of that operation is costing our sheep growers thousands of dollars a year; but they don't seem to notice it, as dealers do not openly discriminate, but pay a blanket price, giving more for the buck lambs than they are worth, and less for the ewe and wether lambs than they should, simply because they find it easier to so deal, just as dealers in butter made on the farm used to pay a uniform price, by reducing the price paid for the *good article* to the value of the inferior, so as to give themselves a safer margin.

Many farmers grow good lambs and when the times comes that the least profit is in sight, thoughtlessly sell them in the fall of the year. For instance, good lambs could be bought in the fall of 1904 at \$3.50 each in many sections. The same lambs fed cheaply, moderately, and regularly till March and April of this year, would readily bring \$10.00 each. Allowing the very liberal sum of \$2.50 as the cost of winter fattening we have a clear profit of \$4.00 per head, and that on an investment of \$3.50 plus feed, \$2.50, for a few months. Of course, we must not forget that last season was

an exceptional one. Yet during the previous ten years, only once did the winter fattening of lambs fail in giving handsome profits, and during the exceptional year—1896—no other kind of live stock paid any better, if so well, as the fat lamb.

The man who now has a good flock of sheep, be they pure-breds or grades, has a gold mine on his farm; and with proper care the crops of lambs this and coming years, will yield the easiest made and most profit of any operation on the general farm. If you have not a flock don't sleep till you get one, is the writer's suggestion.

NOXIOUS WEEDS.

By H. H. MILLER, O.A.C., GUELPH.

I do not think I shall be charged with an undue estimate of the importance of this subject if I say that it is one of the most important confronting the farmers of Ontario to-day. During the past year, especially, the war against weeds has been prosecuted with great activity; and intelligent farmers are beginning to give due attention to the subject. Our Governments have recognized its importance, and are directing their efforts toward assisting in the solution of the problems which are confronting us in connection therewith. As a result, literature *re* this subject is being more liberally disseminated, and Institute lecturers are giving it prominence in the list of their subjects for discussion. The Dominion Department of Agriculture, Ottawa has established a Seed Laboratory and enacted a Seed Control Act, seed inspectors have been appointed and many other factors might be mentioned which would indicate a general revival of interest in this question.

That the above agencies are meeting with the unified support and appreciation of the farmers, there is not the least doubt. Prof. Lochhead, Botanist, Ontario Agricultural College, Guelph has in response to an inquiry *re* the present status of the weed problem in Ontario expressed himself as follows:

"DEAR MR. MILLER: I believe the farmers are showing a greater interest in weeds and weed seeds than ever before, for my correspondence during the past spring and summer dealt largely with weeds, and probably more excursionists made inquiries regarding weeds last June than on any previous occasion. This increased interest is quite natural, and to my mind may be accounted for as follows: The passing of the Dominion Seed Control Act brought home very forcibly to farmers the urgent need of greater care in the purchase and sowing of grains and grass seeds, and the scarcity of labor has not allowed the farmer to keep his lands so carefully cultivated as he would wish, with the result that in some instances the weeds have got the upper hand, and the fields are no longer cultivated.

Yours very truly,

(Signed) W. LOCHHEAD.

Such an expression of opinion coming from so trustworthy a source is indeed gratifying. It indicates that good results are achieved through the co-operation of the Government with the land owners, and the increasing desire of the farmers for knowledge *re* the best way to keep the noxious weeds in subjection augurs well.

To know a weed when it makes its first appearance, its characteristics, and how to deal with it, may be said to be the very key to successfully keeping these aggressive enemies in check. To have known the Perennial Sow-

Thistle, for instance, when it made its first appearance more than thirty years ago, would indeed have been an incentive to keep it under control. What this would have meant in dollars and cents to the farmers of the present time it is difficult to estimate. There is little doubt, however, that the presence of this one weed in Ontario is costing the farmers hundreds of thousands of dollars annually. This well proves the assertion that although education costs a great deal, ignorance costs more.

It is not necessary to enumerate here the numberless ways in which weeds are harmful, but before passing over this phase of the subject, I wish to call attention to two or three of the most important. The first is in robbing the soil of plant food. An analysis of weeds of various kinds usually shows a specially high percentage of potash and phosphates, and there is little doubt that their extensive root systems often collect a large proportion of the manures applied to the soil which is not intended for their benefit. Experiments conducted by Prof. Snyder of Minnesota, go to show that a crop of Wild Mustard will take from the soil as much phosphoric acid and potash and twice as much nitrogen as an ordinary crop of wheat. As these constituents represent money, this fact is worth remembering.

Robbing the soil of moisture is very important, especially in a dry summer. In this instance all controllable water should be retained in the soil. Where weeds are present, they compete for the supply and reduce very materially the amount available for the crop. From experiments conducted at the Ontario Agricultural College some years ago, it was estimated that by allowing ten plants of Wild Mustard per square yard, there would be drawn from the soil and transpired into the air more than twenty tons of water daily. Thus we see that in the conservation of soil moisture the elimination of all weeds is a decidedly important factor.

The last point to which I desire to call attention, and one which is not often considered, tends to the economic side only. It is stated as a fundamental law of agriculture that the presence of noxious weeds in any community is a fair criterion of the industry and thrift of that community. This is a reasonable deduction, and it cannot be denied that the presence of even a few weedy and carelessly kept homes in any community, depreciates not only the profits and value of the farms on which they grow, but puts what amounts to a mortgage on other farms. No desirable prospective buyer will purchase a farm polluted with weeds or that is likely to be from an adjoining farm. Thus merely to facilitate the ability to turn one's realty into cash in time of necessity, it is better to keep the weeds out.

In the classification of weeds we may from a cultural view point designate them as annuals, biennials, and perennials. Annuals, as the name implies, live only one season; biennials live two seasons; and perennials an indefinite number of seasons. In order to fight dangerous weeds successfully, it is necessary to study their distinctive peculiarities, such as habits of growth, root system, method of propagation, etc., and then the proper methods of extermination may be arrived at. Annuals as a class vary greatly. Some of the annuals approach the biennials and are known as winter annuals. They are, as a rule, the most dangerous; and among their number are prickly lettuce and squirrel-tail grass. These winter annuals germinate seed in the autumn and produce a growth of leaves and live through the winter; and upon the appearance of spring grow rapidly and produce seed. It is very important to keep the annuals and biennials from seeding, as they depend upon reproduction by seeds alone and, if allowed to continuously go to seed, the ground will in a short time contain myriads of them. Perennials do not, as a rule, seed so profusely. In fact many of the

weeds of this class do not depend upon seeds for reproduction, as is evidenced by the horse radish, and live-for-ever, which have continued to propagate in this country without seeds. To destroy perennials, however, seed production must be prevented and also the underground portion must be killed. Conditions vary so much, that only general and not specific suggestions can be given *re* the methods of dealing with them and every farmer will have to use his judgment in adopting methods to meet the requirements of his own peculiar case.

The phase of this problem that I wish especially to direct attention to is the presence of a few new weeds, which are attracting special attention in the Province. These weeds have proved themselves troublesome and aggressive pests in the Provinces or countries from which they have been introduced and although many of them are comparatively rare as yet, they cannot be disregarded. People are generally familiar with our common weeds; in fact, too often so familiar that they have come to be accepted as a matter of course and a necessary evil. The new weed coming as an added evil generally attracts attention, and rightly so, as there is always a possibility of its becoming more noxious even than those already common.

Just here, it may be of interest to note what the agency of man has done by the way of introducing weeds into this country. The following well known pests have been introduced from Europe, principally through the medium of commercial seeds: Curled Dock, Corn Cockle, White Cockle, Mustard, False Flax, Chickweed, Dodder, Blue Weed, Chicory, Ribgrass or Buckhorn, Twitch Grass, Wild Oats, Ox-eye Daisy, Canada Thistle and Perennial Sow-Thistle. Numberless others might be added to this list, but this is sufficient to indicate that the agency of man in the distribution of weeds far exceeds in importance all others combined.

The first weed which I wish to refer to is ORANGE HAWKWEED or DEVIL'S PAINT BRUSH, (*Hieracium aurantiacum*). A dozen years ago this weed was practically unknown in the Eastern townships (Quebec) and Vermont State. It has become so well established that land which was worth fifty dollars an acre a few years ago, is not worth five to-day. It is a native of the mountainous regions of Europe and was introduced into this country as a garden flower. As it has a very attractive blossom, it is often introduced into cemeteries, and the writer has known several instances where whole districts have become infested through this medium. It thrives in all soils, from sandy loam to heavy clay and has already been introduced into many sections of Ontario, especially the eastern part. It may be easily recognized by its conspicuous orange-red blossoms, which are borne in clusters on a nearly leafless stem, one to two feet high. It forms rosettes of leaves at the base, which smother out all vegetation. This weed spreads by runners as well as by seeds. The seeds are provided with tufts of hair similar to those found on the seed of the dandelion; these aid in distribution. When this weed first makes its appearance, an application of common salt is perhaps the surest method of destroying it. Eighteen pounds per square rod has been found sufficient to destroy every plant. Hand pulling this weed is a waste of time, as numerous root stocks will be left in the ground and it will only give the plant a temporary set back. It usually occurs in patches and can be kept under control only by the most thorough cultivation or by an application of salt such as recommended above. This is a weed that should be watched by the farmers of Ontario, as it works rapidly and holds all the room it gets.

PRICKLY LETTUCE, (*Lactuca scariola*) is a weed that is disseminated chiefly by railways. It has become well established in some of the western

counties, especially Essex, Kent and Lambton, where it was introduced by the way of Detroit and is common along the main lines of the railroads running from Detroit to Niagara Falls. It was not noticed in the United States until the year 1868, when it was found in Massachusetts. Since then, however, it has spread through every state in the Union.

It is most easily recognized by its thistle-like appearance and the curious habit of its leaves. These leaves are very prickly along the mid rib and also along the margins. They are so twisted at the base as to have the edge of the blade pointing north and south, which has given it the name of compass plant. Cattle, horses, and especially sheep will eat the weed quite readily when other food is scarce. On account of its long, tough tap root, it is practically impossible to pull it up and cutting seems of little avail, as it will immediately put out quantities of shoots from near the base. Cultivation by hoed crops is by all means the best method of eradication where it has become established but, when practicable, spudding below the crown will be found effective.

It has not, as yet, become common enough in Ontario to have received much notice, but the rapidity with which it has spread since its inception into the United States should be a warning to exterminate it before it asserts itself as one of the troublesome and aggressive weeds of the Province.

SQUIRREL-TAIL GRASS OR WILD BARLEY (*Hordeum jubatum*). This is of the worst pests of the western farmer and is generally designated as squirrel-tail grass, from its resemblance when in bloom to a squirrel's tail. This grass is a winter annual or perhaps a short-lived perennial. It has some feeding value when young and tender, but is absolutely worthless as a food when once in bloom. The seeds of this plant are barbed upwardly and penetrate the lips of stock, especially horses and sheep. They work in under the tongue and lips, causing deep ulcerating sores. These seeds are surrounded by three somewhat long awns which enable them to be carried by the wind. When they alight they are sharp enough to pierce the ground and will eventually push their way in until they connect themselves with the soil, and begin to grow.

Though the weed is generally looked upon as a prairie plant, it has already established itself in many parts of Ontario and appears to have come to stay. The medium by which it is generally introduced is doubtless the railway, though in New Ontario, where it has been reported by Prof. Lochhead as having obtained a good foot hold, especially in Manitoulin and Manitowaning, it doubtless travelled with the wind across the ice from Michigan. While it does not seriously affect lands under short rotation, it is a particularly dangerous weed to be allowed to take possession of pastures. It will thrive on almost any kind of soil sufficiently loose to enable the seed to get a start, and when it once takes possession of a permanent pasture, it is a pretty serious question what to do with it. Close pasturing with sheep in the early stages is probably the best remedy where the pasture infested is dry enough for sheep. Cutting and burning should, however, be resorted to at once when it makes its first appearance. This weed has a great tendency to frequent waste places where it is allowed to ripen its seed: thus land becomes reseeded by seeds blowing in from these places, not only in summer, but in winter. It is therefore obvious, that preventing waste places from becoming breeding plots for weeds is scarcely less important than keeping ground clean that is actually occupied by crops.

CLOVER DODDER (*Cuscuta epithemum*) has been reported during the past summer from several counties in the Province, especially the Western part. This weed differs from most of our common weeds in not being able

to draw its food from either the soil or the air, but belongs to the parasites or those plants which live upon the juices or reserve products of other plants. Its seeds are practically of the same size as clover seed, but are dull in color and have a rough surface. They may be easily distinguished from clover seed, however, which is bright and smooth, but when they once become mixed there are no screens that will separate them. These seeds germinate in practically the same manner as the clover, but instead of two green leaves appearing above the surface they send out a very inconspicuous yellow shoot. These shoots throw out haustoria "suckers" at points where the stem comes in contact with the clover, in much the same manner as common plants draw nutriment from the soil. When this union is effected the dodder plant disconnects itself from the earth but still continues to grow rapidly, even more rapidly than the clover, and as this growth is produced at the expense of the host, the clover is soon killed. The first indication of dodder will likely be noticed on the clover in the form of masses of yellowish leafless stems. These stems produce densely clustered pink or white flowers which are succeeded by rounded seed pods, each pod containing about sixty seeds.

Though the existence of clover dodder in various parts of the Province has been reported from time to time for many years, prompt action in its extermination has kept it in subjection. That it is however capable of accomplishing serious injury, even in this Province, has been well demonstrated at the expense of a few farmers in the county of Perth. The writer had an opportunity of visiting a farm several times during the past summer, near St. Mary's, where in practically two years a fifteen-acre field of alfalfa had been reduced in yield from six tons per acre of alfalfa to what was practically a worthless tangle of dodder tendrils. In fact, the larger part of the field was not harvested during the past summer but produced instead bushels of dodder seed. Fortunately this case probably has not a parallel in Canada, although I have good authority for saying that it would find plenty of them in the United States and Europe. It was introduced into this neighborhood in 1902 in alfalfa seed. Being an annual it has clearly demonstrated its capabilities for reproduction and has been the means of discounting the somewhat common fallacy that it would not ripen its seed in Canada, and its presence in imported clover seed was not therefore regarded as seriously objectionable.

When dodder is first noticed in a clover or alfalfa field, it should be cut as closely as possible several feet beyond where the yellow vines are observed. If it has not yet reached the flowering stage, repeated cuttings at frequent intervals should dispose of it. If it has reached the flowering stage, however, these spots should be spaded, as many of these flowers will remain on the stubble after the clover has been cut and mature their seed. I may say that in all instances the greater part of the seed is produced near the root of the clover stem. For entire fields, cultivation with hoed crops is necessary, but rotation should be modified so as to leave out leguminous plants until the vitality of all seed remaining in the soil has been destroyed, which will take about five years.

PERENNIAL SOW-THISTLE (*Sonchus arvensis*) requires no introduction to the farmers of Ontario. It was introduced into the Province more than thirty years ago, but its noxious character did not appear to have been known until it had become thoroughly established. It is scarcely a dozen years since the late Prof. Panton of the O.A.C. compiled, as a result of careful investigations, a list of twenty-five species of weeds common to Ontario, in order of their relative badness. Perennial Sow-Thistle was then placed twenty-fourth in the list. At a meeting of Institute representatives which was

convened in Toronto during the Exposition last fall, a prominent worker, in alluding to this weed, made the assertion that he did not believe there was a farm in Ontario upon which perennial Sow-Thistle could not be found. This is, figuratively speaking, correct, and is very suggestive of the fact that we are at the present time, by our indifference and neglect, nursing weeds that are destined in less than a dozen years to occupy the same invincible position as perennial Sow-Thistle does to-day.

Perennial Sow-Thistle is an exceedingly difficult weed to eradicate. When small patches first appear they should be spaded out. This must be thoroughly done to be effective as if a piece of root stock a few inches in length is left in the ground it may render all the work of no avail. As this weed usually grows with cereals and ripens its seeds about the same time, it should be cut during the period of its most rapid growth which is in June. This will prevent its seeding and repeated cuttings will eventually starve out the roots. Three cuttings in one season, June, July and August, will give it a very serious check and at the same time will insure against re-seeding. It is estimated that seeds buried in the soil will retain their vitality for 15 years.

In conclusion I desire to call your attention to legislation which has been enacted in Ontario to enforce co-operation in the suppression of weeds. I have selected sections from the Revised Statutes of Ontario, 1897, which state, the responsibilities of railway companies in keeping down weeds on their property, provision which compels the destruction of weeds growing on road sides and waste places, also the Ontario law *re* the sale of commercial seeds. These are without doubt the most important ones for the introduction of new weeds and the propagation of old ones.

Unfortunately all laws pertaining to the destruction of weeds appear to have been more honored in the breach than the observance, during the past; but this I believe may be largely attributed to a general lack of knowledge concerning them. A thorough advertisement of the weed law would do much to secure its observance in Ontario, as I believe if it were better known the farmers would give it their support by seeing that it was enforced. It is not sufficient that the municipal authorities should receive copies of this Act, but it should be more frequently sent to agricultural and other papers for publication, so as to disseminate a knowledge of its provisions as widely as possible among the people.

The following are the sections of the Ontario Weed Law referred to above:—

R. S. O. 1897, Sec. 107, Chap. 207.

Every railway company, whether or not any of the clauses or provisions of this Act are incorporated with the Act incorporating the company, shall cause all cleared land or ground adjoining their railway, and belonging to the company to be sown or laid down with grass or turf, and cause the same as far as may be in their power to be covered with grass or turf, if not already covered, and cause all thistles and other noxious weeds growing on the land or ground to be cut down, and to be constantly cut down, or to be rooted out of the same.

Sec. 108. If a railway company fails to comply with the requirements of the last preceding section within twenty days after they have been required to comply with the same, by notice from the mayor, reeve or chief officer of the municipality of the township or county in which the land or ground lies, the company shall thereby incur a penalty of \$2.00 to the use of the municipality for each day during which they neglect to do anything which they are lawfully required to do by the notice; and said mayor, reeve, or chief officer may cause all things to be done which the company were lawfully required to do by notice, and for that purpose, may enter by himself upon the lands or grounds, and such municipality may recover the expenses and charges incurred in so doing, and the said penalty with costs of the suit in any court having jurisdiction in civil cases to the amount sought to be recovered.

Re spread of weeds on Highways. It shall be the duty of the overseers of highways in any municipality to see that the provisions of this Act are carried out with respect to highway divisions, by cutting down or destroying or causing to be destroyed at the proper time to prevent the ripening of their seeds, all the noxious weeds growing on the highways or road allowances within their respective divisions.

Penalties. Any owner or occupant of land who refuses or neglects to cut down or destroy any of the said noxious weeds, after notice given by the inspector as provided by section 4 (notice shall be given not later than the 10th day of July in each year, and the weeds shall be cut down or destroyed within ten days from the service of the notice), or who knowingly suffers any of the said noxious weeds to grow thereon, and the seed to ripen so as to cause and endanger the spread thereof, shall upon conviction be liable to a fine of not less than \$5.00 nor more than \$20.00 for the first offence.

Re the sale of seeds. Sec. 11, Chap. 279.

Any person who knowingly sells or offers to sell any grass, clover or other seed, among which there is seed of Canada thistle, ox-eye daisy, wild oats, ragweed, burdock or wild-mustard, shall for every such offence upon conviction be liable to a fine of not less than \$5.00 nor more than \$20.00.

Penalty for neglect of duty. Every inspector, overseer of highways or other officer who refuses or neglects to discharge the duties placed upon him by this Act shall upon conviction be liable to a fine of not less than \$10.00 or more than \$20.00.

From the above we notice that our Legislature has supplied us with stringent legal safeguards which only remain to be supported and enforced by the people directly interested.

While their import is good, however, changes should be made in the species of weeds and weed seeds designated, as there have been many weeds introduced since its inception which are more noxious than those prescribed.

SEED FAIRS.

By A. J. REYNOLDS, SCARBORO.

During the last few years considerable attention has been paid to the importance of good seed. The results obtained in connection with the Experimental Union, the Dominion Experimental Farm, and the Guelph Agricultural College, have all had a very material effect in the introduction of new and improved varieties of seed. But to bring the opportunity of securing better seed within reach of the farmer was the main object in establishing Seed Fairs. One of the first organizations to introduce this system was the Farmers' Club of East York, which had an existence some years prior to the organization of the Farmers' Institute, but for many years the Seed Fair has been conducted under the auspices of the Institute.

The Fair is usually held in February or March, thus giving farmers ample time to secure their supply of seed. The plan adopted here has been not to offer any prizes, but to solicit entries from reliable farmers having comparatively clean farms. Each entry is to be accompanied with not less than a peck of the kind for sale, a statement of the quantity for sale and the price per bushel. It is specified that seed must be clean of foul seeds, and a true sample of the kind offered.

In connection with the show of seed a public meeting of the Institute is held, when practical addresses are delivered by those who have had experience in the growing of good seed.

Mr. C. A. Zavitz, Experimentalist, Guelph, his assistant, Mr. John Buchanan, and Mr. G. H. Clark, Ottawa, have rendered excellent service at various times.

Farmers thus having meetings together, can exchange ideas and discuss methods, as well as have an opportunity of inspecting the various samples of seed offered. Some of the advantages have been that those needing seed have an opportunity of securing the same with little trouble, and those who have seed of a high quality for sale have an opportunity of disposing of the same at a remunerative price.

BEAUTIFYING FARM HOMES.

BY HENRY GLENDINNING, MANILLA.

When a person from any of the old countries of Europe speaks of home he means his fatherland. Let us in discussing this subject look at it in somewhat the same light and ask ourselves the question, "Can we as individuals do something in making our country more beautiful?" Let us consider the question of our country roads. While much money and labor has been spent upon the centre of the road, where vehicles travel, and the roads in general are in a pretty fair condition to accommodate the travelling public, very little has been done in this Province in improving the sides of the roadway. In many cases they are just as nature left them, with knolls and hollows and large stones lying on the ground.

A little labor on the part of each owner of the land bordering upon the road, which can often be performed in the spring of the year before the fields are dry enough for farming operations, would make a great change. By removing stones, plowing and leveling the ground and seeding down with grass, the attractiveness of the highway can be greatly increased. Old fences should be removed and the bottoms of the same cleaned up and a nice wire fence put in the place of the old rails. These improvements are being made in many places throughout Ontario.

TREES. The planting of trees along the roadside should receive more attention. In many places the farmers have planted the fronts of their farms with trees, principally maples, which adds very much to their appearance and value; but in many cases, two mistakes were made—first, the trees were planted too closely; secondly, they were planted inside the fences, on the farm, causing loss to crops by shading and taking up the soil moisture which should have gone to nourish the field crops.

We appear to have two systems of planting trees in this Province, one in the country where they are planted inside the fence on the farms, the other in the towns and cities where they are planted out on the streets between the sidewalks and the waggon-road. I ask you to think for a moment and consider which system looks the best. I think you will conclude that the town plan looks the most attractive, besides providing shade to those who walk or drive along the road on a hot sultry day. In planting trees, they should not be less than thirty feet apart, and they should be placed far enough from the fence to allow for a good broad walk.

Trees are planted in straight rows along the roadside and lanes, but if planted in groves on the north and west sides of the buildings they have a fine effect. This is especially so of groves of pine or spruce where they protect the buildings and stock in the winter time.

BUILDINGS. While we all admire substantial and well-built buildings of fine design, which add beauty to the farm, it is not desirable to urge this point too far, as each farmer knows the state of his finances, and should govern

himself accordingly. With moderate buildings and a little outlay in planting trees, hedges, and shrubs, a farm can be made most attractive and many dollars will be added to its value.

The location of the farm buildings is an important consideration. They should be placed where it will be convenient for hauling the products to the barns, but at the same time should be near the public road and situated upon an elevation, so as to give good drainage, and, if possible, gently sloping towards the highway.

PAINT. Paint is one of the things that the people of this country do not appear to appreciate as they should. We often see a fine house nicely painted when new, but it is allowed to stand until it is worn off, and the boards become warped and checked from the effects of the sun and rain. The woodwork should receive a coat of good paint every few years, which will keep it always looking fresh.

People living in the country have a decided advantage over their town friends in the matter of paint. The man in the town is forced to use shades of brown or other dark colors owing to the coal smoke destroying the light colors. In too many cases the man in the country has followed the example of his brother in the town by using the same dark colors. Light shades contrast beautifully with the green grass and leaves of the trees, giving the home a brighter and more cheerful look, and there is no smoke to dim those colors as in the cities.

LAWN. Every farmer should have a lawn, as it adds very much to the appearance of the place. In laying out and arranging a lawn there is a great opportunity to show a person's artistic taste. If a landscape gardener can be easily obtained it will be well to procure his assistance. A farm lawn should not be too large, but by judicious arrangement and planting a small piece of ground may be made to look much larger at first sight than it really is.

The first work to be done is to level the ground. This does not mean that it should be level in all directions. It should follow the natural contour of the land with all the little unevenness removed.

The seeding should be done with some good permanent grass that will give a fine velvety sward, when it gets age and is closely cut. Nothing is better than Kentucky Blue Grass with a little white clover added.

WALKS. A winding or circular walk between the house and the road looks much better than a straight path up to the front door.

HEDGES. Hedges add very much to the appearance of a lawn, especially those composed of evergreens, as they show a fine contrast with the white snow in the winter time. There is no better plant for hedge purposes than our native white cedar. Mistakes are often made in the management of evergreen hedges, by letting the young trees grow up of their own accord for two or three years, before trimming them. There are several objections to this plan. The principal one is that the lateral branches near the ground grow to a considerable length and have all their green leaves on the outside. When the hedge is lined up and trimmed most of the green leaves are cut off. The result is, that there is a bare, leafless hedge at the bottom and it will always remain so, as evergreens, such as the cedar and spruce, do not throw out branches from dormant buds, as is the case with many of the deciduous trees. Hedges look best on the sides of the lawn and should seldom or never be planted in front of the dwelling, as they soon grow up and obscure the view between the house and public road.

In the planting of trees, care must be taken in the selection. If the lawn is small it will be well to select those kinds that do not grow to a great

size, while large varieties can be planted with advantage where there is plenty of room.

Straight rows of trees may be placed on the outside, but should be avoided in the centre. Three trees should never come in a line from any point of view. Evergreens should find a place in every lawn where there is sufficient room. Shrubs may be planted singly or in banks, care being taken to place the strong growers in the background and the dwarf varieties in the front.

A few well arranged flower beds add greatly to the effect.

MISTAKES. All honor to the men that planted trees and laid out lawns around their houses, when the country was new, but they sometimes made mistakes, which we should note and try to avoid. Trees were planted too close to the house, they failed to comprehend that the small tree, perhaps not larger than a walking stick, that they planted twenty feet from the dwelling would become a nuisance in forty years by shading, thereby making the house damp and unhealthy. Trees were often planted in front of the house in such thick clumps and along the fence so closely (especially evergreens) that the view is completely obscured between the house and public road. The same may be said of hedges.

It may be said that those trees can be cut down, which is true, but we must remember that associations grow up with those trees, and that it either takes a brave or a heartless man to cut down a fine specimen of a maple or oak that was planted by his father or grandfather. On account of these associations we tolerate those trees from year to year, although our better judgment tells us that they should be cut down.

POTATO CULTURE AND TREATMENT FOR BLIGHT AND ROT.

BY HAROLD JONES, MAITLAND.

A few years ago the potato crop was given no very serious consideration, for then the farmers had only to select a piece of soil in a good state of fertility, plant their crop when convenient, cultivate them once or twice, hill them up, and rest assured that they would have a good crop to dig in the fall, but since the introduction of diseases injurious to the crop, conditions have very materially changed and crops have been gradually growing less and less until to-day the average crop by counties in older Ontario runs from 75 to 150 bushels per acre.

A crop of this nature does not pay the grower, and, if we can say or do anything to help increase the present average yield, we may count our time well spent.

The potato crop might easily be made one of national importance and a source of revenue not dreamed of to-day.

As an illustration, let us see what some other countries in the world are doing along this line. Take Germany, for instance, the largest potato-growing country in the world. The Germans are able to take high-priced land, pay high rentals and high taxes and raise this crop at a profit. The rural classes in Germany use large quantities of potatoes for food, they manufacture large quantities of starch from the potato, and several times I have known of ship-loads of German potatoes being placed on the American market, where they are sold at a profit to the growers in competition with the American product. They are also manufacturing alcohol for firing purposes and running small

stationary engines by this means, and the German Government, realizing the importance of encouraging agricultural enterprise, are now preparing to fit out some of their cruisers with engines run by alcohol made from the potatoes of the country.

In dealing with this question it might be just as well to handle it in detail from the preparing of the soil to the harvesting of the crop, and in doing this I will likely touch upon points that have been familiar to some of us all our lives, but, nevertheless, it may give us some new thoughts and teach us what we may reasonably expect as a result of doing certain things.

In selecting your potato ground, if you have sandy loam on your farm, it is preferable to clay or stiff clay loams. On favorable seasons you can possibly grow a crop of good quality on clay, but they will not dig so clean as they will in sandy loam, and the clean bright potatoes always sell first on the open markets, and what sells first sells best. To have the soil in the best possible condition for a full crop it is advisable to plow under a cover sod in the late fall with, preferably, most of the second growth to plow under. With these conditions, when the soil is rich enough in fertility to raise a good clover crop, it is not necessary to apply more than 10 to 11 loads barnyard manure to the acre, as the clover roots and tops have supplied an abundant supply of nitrogen, which will become available as the potato crop requires it for rapid growth in the earlier part of the season, besides placing tons and tons of vegetable matter in the ground that help to make it porous and open and more easily made mellow and warm for spring planting. If the soil is very sandy it is advisable to apply potash in some form. Where wood ashes can be obtained, no better form of potash can be had, but where ashes cannot be had an application of muriate of potash is advisable. Apply about a good waggon load of ashes or 150 pounds muriate to the acre.

If the land is fairly level, spread the manure on the ground during the winter months, to save labor in the spring, but, if land is rolling and subject to spring washings, spread in the fall or early spring.

In the spring at grain seeding time do not forget your potato ground, but commence to work it with a surface working tool, either a disc harrow or cultivator, as soon as the ground will pulverize, and, in that way, you are killing large quantities of weed seeds and also conserving the accumulations of winter moisture for the benefit of the crop later on. Knowing that a 200-bushel crop of potatoes requires about 600 tons of water to the acre, or equivalent to six inches in depth, to bring it to maturity, we must handle our land in a way to conserve winter moisture, for, although our annual precipitation is about 23 inches, the sun and winds of summer will pump it out of the ground much faster than it receives it, if there is no soil mulch or other protection to arrest evaporation. The harrowing or cultivating should be repeated two or three times before planting. At planting time plow the ground about 5 inches deep and harrow down and the ground is ready for the seed. Open drills 2½ feet apart, 3½ inches deep, and drop seed 14 inches apart in the drill. Cover with plow and harrow level. Repeat the harrowing every week until the plants appear above ground, and then use the weeder until the plants are six inches high, when the one-horse cultivator should be used and kept going as long as the horse can walk between the rows, which will be about the 1st of August in potatoes that are planted about May 24th. At the last cultivation use the hillers and throw a dust mulch to the plants; a hill is not necessary, as if the foregoing directions are followed in preparing the soil you have a fine open, porous soil and the tubers will not nose out to any extent.

In selecting your seed choose even-sized smooth potatoes and cut two or three eyes to the piece. By selecting seed in this way I have found that there

is no necessity of changing seed every few years the way so many do at present, but that the quality of the crop will rather improve as time goes on and you will have fewer small ones from year to year.

Drop and cover your seed as soon as possible after cutting, for the longer seed is left exposed after cutting the less vitality it has, and in some cases when left in bags or boxes for a few days or even hours, it is ruined.

By dusting the fresh-cut seed with land plaster you have stronger seed and usually a better crop.

The insects and diseases that most seriously affect our crop are the flea beetle, potato bug, and late blight or rot. The flea beetle is not generally noticed, as it flies or jumps off the plants when approached, but its presence is easily detected by closely observing the foliage. The beetle is very much like the turnip fly, and eats small round patches about the size of small shot part of the way through the leaf, and, when numerous, very much weaken the plant. The application of Bordeaux mixture helps to keep the insect in check. The eggs of the potato bug should be closely watched, and, when you notice them beginning to hatch, spraying with Paris green and lime should be done at once, as the young bugs commence feeding at the crown of the plant. They can easily be destroyed with a solution of Paris green, $\frac{1}{2}$ pound to 40 gallons of water, whereas, if they are allowed to gain size and scatter over the plant, it is harder to kill them and the foliage is much eaten, which weakens the plant.

Any time after the 10th of July, when weather conditions are favorable, the plants are liable to be attacked by blight, as from that date on through the growing season the spores of the blight are ever present. The earliest date that I have ever seen the plants affected was July 22nd, and, sometimes, it does not show until late in August; but knowing that spraying with Bordeaux mixture is a preventive or a straight case of insurance and not a cure, it is necessary to commence spraying soon after July 10th, for, if the leaves of the plant are kept covered with the mixture, the spores are burned the same as if they touched a hot iron, and perish. By spraying on July 15th, August 1st, August 15th, and September 1st, you practically have the foliage protected against living spores taking root. If heavy rains should follow a spraying it will be necessary to repeat it, possibly making five sprayings in the season.

Bordeaux mixture for potato spraying is made by dissolving 6 pounds of bluestone and 5 pounds of stone lime to the barrel of water (40 gallons). First dissolve the bluestone in boiling water and pour into the spray-barrel and then fill the barrel two-thirds full of water before straining the milk of lime in, then add $\frac{1}{2}$ pound of Paris green to kill the bugs and fill the barrel. Do not put the lime water on the strong bluestone solution or you will have a curdled mass that will not pass through the nozzles of the pump. This is very important if you wish to do good work. By adding the Paris green at each spraying the bugs will never be noticed at any time during the season.

THE PRINCIPLES AND PRACTICE OF HORSE-BREEDING.

EXTRACTS FROM BULLETIN 127 (WISCONSIN).

Below are given a few extracts from Bulletin No. 127, prepared by Dr. A. S. Alexander, and issued by the University of Wisconsin Agricultural Experiment Station in August, 1905. The Department of Agriculture for Ontario is indebted to the Wisconsin Department for a number of copies of

this bulletin furnished to Ontario Institute speakers. These speakers have testified as to the excellence of this bulletin, and it is upon their recommendation that portions of the bulletin are presented herewith.

While some slight changes have been made in the context in order that the matter might apply more directly to Ontario conditions, it must be remembered that the writer is dealing with the situation as found in Wisconsin and some of the statements may not be wholly applicable to Ontario. However, the lessons taught are well worthy of the careful consideration of Ontario breeders.

There is perhaps no subject of greater importance to the raisers of stock than that of persistency and continuity in breeding. In a number of sections in the Province there appears to be no person or persons responsible for the class of sires used from year to year. This is a matter which should be taken up by the Farmers Institutes and agricultural societies or some other organization, and a system introduced by which the class or classes of stock bred in the various sections may be, as far as possible, along definite lines. It is, as pointed out in Dr. Alexander's bulletin, most unwise to introduce Percheron blood in sections where Clyde sires have been used, and *vice versa*.

UNIFORMITY AND PERSISTENCY IN BREEDING.

There has been general lack of these principles in our breeding operations as there has in every State where imported animals have been employed. Our farmers have attempted to improve their horses by grading-up, by which is meant, mating with pure-bred stallions until the blood of these sires shall have predominated over that of the native stock and stamped the characteristics of the pure breed upon the resultant progeny. Every step taken in this direction has been well intended and the results would have been highly satisfactory had the breeders continued to breed on and up by successive top-crossing with sires of the same breed. Five or more of such top-crosses are required to obliterate the native blood in the combination, and, in fact, constitute practical purity of blood, according to the requirements of some of the stud books. But breeders here, as elsewhere, have followed no concerted plan in their grading-up operations. They commenced right, but have gone wrong shortly, by mating the female progeny with horses of another pure breed—one different from the first one used, yet possibly of as good type and character. All sorts of crosses have been made in this way, the result being that most of our horses are of mixed breeding and many of them mere mongrels and misfits. Out of this heterogeneous collection of nonentities a few phenomenally good individuals have been found, and they have at once attracted the eye of the buyer and realized an appreciative price. On the average, however, the mixed-bred horses have proved disappointing, and have been so numerous and indifferent in quality and character that they have not attracted outside buyers and have sold at small prices in their home districts. The few individually excellent mixed-bred horses have sold for several times the average amount, and by intelligent methods of mating and feeding, in addition to persistent breeding to sires of the same blood used at the commencement of the grading-up process, the average grade might have been made of equal excellence and value. While fine individual animals are sometimes produced by mixed breeding or cross-breeding, there is nothing definite about such mating methods, and the progeny is much more apt to be nondescript than above average. The only certain method of raising the general average of our horses as regards type, quality, character, action and specific utility must come from persistent breeding to sires of the same breed until the blood

of that breed has wholly obliterated the impure, or native blood derived from the mares originally used. Where this is done the resultant progeny will be pure in blood, to all intents and purposes, and, to the same extent, true in every character and quality of the pure breed employed. Naturally, then, we should find among these animals, graded up to a practical purity of blood, general excellence of form, quality, action and utility, such as characterize the breed used in the work of improvement, and such is the case, as a general result, wherever this course has been pursued.

To make our argument more clear let it be said that if the owner of a brood mare, or number of mares, of selected type but of native or mixed blood, starts to grade-up by mating them with a pure-bred Clyde stallion, that breed should be used right along, year after year, until all of the native, or mixed blood has been overcome and obliterated by the Clyde blood. This is to be done by castrating and selling all of the male progeny and weeding out all poor individuals of the female progeny; then mating the selected grade fillies each time with Clyde stallions. As already stated, at least five top-crosses of pure Clyde blood must be used in this way to obtain practically pure-bred Clyde stock from a scrub or mixed-bred foundation, and, when these crosses have been put on, the owner would be foolish indeed to mar it by the admixture of alien blood. The same principle applies to whatever breed of horses is started with. That breed should be persisted with until its characteristics predominate in the blood of the entire horse-stock of the farm, and if the breed commenced with was suitable for the district, and the market and the horses in general were fully fed for perfect development and obtained from sound sires and dams, the resultant stock would be marketable at remunerative prices to buyers of the particular class of horses bred. During the grading-up process every out-cross to a sire of other blood than the one commenced with will set the entire operation back to where it started. Should a number of out-crosses be made the process is not grading-up, but standing still, or retrogressing, and the stock bred will have neither definite character nor certain value.

We have been using pure-bred sires, to a greater or less extent, for many years, yet few, if any, districts have persistently used such sires in a right line until the character and quality of any one breed have become predominant, and the breeding district consequently noted as a center for excellent horses of the breed chosen and, therefore, attractive to the buyer in need of that market commodity. In Ontario, as elsewhere, we should have many centres noted for the annual production of numbers of horses of standard breed, quality and character, and we can in time create numerous centres of this kind by uniformity and persistency in breeding.

GRADE SIRES OBJECTIONABLE.

In the process of "grading up" the first progeny, from the matting of a pure-bred sire and a native or "scrub" mare is a half-blood the second cross one-quarter, the third, one-eighth, the fourth, one-sixteenth, and the fifth, one-thirty-second. The fifth cross is thus shown to possess very little of the original blood of the native or scrub dam, and if may have all or most of the breed characteristics of the sires used. In some instances less than five top-crosses of pure blood will be necessary to stamp upon the progeny the breed characteristics of the sires, and, indeed, there are some cases where the colt of a native or scrub mare of good character looks almost, if not quite, as perfect in form and quality as his pure-bred sire. This fact demonstrates the prepotency of the sire—that power which a pure-bred animal, from a long

line of pure-bred sires and dams, has of transmitting to his progeny his breed characteristics and individual character, traits and quality with a great degree of certainty. It is prepotency of breed that makes it possible for an Aberdeen-Angus or Galloway polled, black bull to beget a large proportion of black, polled calves from different colored, horned, "scrub" or native cows. It is this prepotency that enables the individual bull or stallion to transmit not only his breed characteristics but his individual excellence of form, propensity and character. Prepotency of both breed and individual come only from a long line of ancestry in the breeding of the individual animal. The grade, whether he has one cross or five crosses of pure-blood in his veins, possesses prepotency only in the degree to which he has been bred pure. That prepotency is slight in the five-top-cross grade and practically *nil* in the one that has but one top-cross. *For this reason, no matter how attractive may be the form, character, quality and disposition of a grade stallion, he is likely to lack both breed and individual prepotency; hence his progeny will, as a rule, favor the "scrub" side of his ancestry more than the pure-bred sire, seeing that the prepotency of the "scrub" is the stronger of the two elements.* Further, it should be borne in mind that true grading-up can only be done by means of a pure-bred sire. The offspring of the grade sire with a grade female makes no advance in breeding. The resultant progeny is a grade, no higher and no lower than his parents as regards breeding. Nature sometimes creates what are termed "sports." Such animals often are of phenomenal quality in one or another respect, but the superior qualities are not due to prepotency of either breed or individual, hence their possessor cannot be depended upon to reproduce them in his progeny. A certain "scrub" or grade stallion may, for example, develop unusual speed and by reason of it gain prizes on the race track, but, if used for breeding purposes, his unique powers for speed are not transmitted to his foals, as they have not descended from a long line of ancestors noted for like speed. He lacks breed and individual prepotency and, for that reason, should not be used for breeding purposes. Success in the breeding of fast horses comes from the mating of stallions and mares that come from families long noted for the possession of speed. Speed is an inherent possession of our trotting breed of horses and has come from selection and line breeding, with that feature in view, until prepotency to produce speed qualifications in the progeny has become an inherent characteristic of the breed, as a whole, while certain families and individual animals possess this prepotency to a greater degree than others. In all of our pure breeds of horses breed prepotency is a fixed character to a great or less degree, and, for that reason, pure-bred sires should be used. Grade sires, on the contrary, lack both breed and individual prepotency and should, therefore, not be used for breeding purposes.

There are exceptions to this rule, as there are to others, but, as a general proposition, the use of grade sires for breeding purposes has been found detrimental and is not practised in any country that has originated and perfected a breed of pure-bred horses. It should be discontinued in Ontario, and not until this is accomplished can we possibly succeed in producing horses of the highest type and quality.

CROSS-BRED FEMALES UNRELIABLE AS BREEDERS.

The offspring of two animals of distinct and different breeds is termed "cross-bred." If, for example, a Clydesdale stallion is mated with a Percheron mare the resultant progeny is necessarily one-half Clydesdale and one-half Percheron. Two distinct and different breed prepotencies have been

merged together in making this cross, and the identity of each has been lost. The two currents of blood have mixed together, and the direction of each has been diverted into a new channel. The two currents have come together from different directions, and by opposition the flow has to a great extent ceased. The cross-bred animal thus produced may and often does appear better in many respects of conformation than either of the parents. This is well seen in the steers and heifers of cross-breeding exhibited so successfully at the International Live Stock Exposition and other similar fat stock shows. Such animals are often of superlative merit and quality in shape and in propensity to lay on flesh and fat rapidly, evenly and upon the most profitable parts of the frame. But they never are used for breeding purposes. The breeder understands from experience that animals thus bred lack prepotency of breed and individual, and, therefore, cannot transmit the perfections of their conformation and character to their progeny. The prepotency of such animals, if present, is a mixed one. There is no prepotency in a direct line, for the production of a specific breed character.

If used for breeding purposes a male of this breeding has no power to transmit his individual characteristics, while his breed characteristics being an alloy of those of two distinct breeds cannot be transmitted. The crossing of two distinct breeds of horses—apart from the legitimate and advisable crossing of a pure-bred upon native, “scrub” or grade mares with the intention of persistent work in the same direction until purity of blood is arrived at—is to be considered detrimental and as surely productive of disappointing results as the similar employment of grade sires. The so-called “Select Clydesdale” is a cross between the pure-bred Clydesdale and English Shire—two distinct but somewhat similar breeds—and cannot be expected to perfectly transmit the characteristics of either Clyde or Shire. This cross produces first-class horses to be gelded for heavy draft work and the females are eminently suitable for similar labor. They should not be used for breeding purposes, however, unless to successively top-cross them with sires of one pure breed—either Shire or Clyde according to the preference of the breeder—so long as the breed chosen is exclusively and successfully used. These truths apply with equal force to every combination of two pure breeds and our breeders will do well to reject for breeding purposes all stallions shown by their pedigrees to be cross-bred.

IMPORTANCE OF GENEROUS FEEDING.

In seeking to improve our horse stock, breeding and selection make success possible, but will fail wholly or partially unless animals of all ages and stages of development, used as material in the operation, are at all times provided with a full supply of the most suitable food. Many a man has fallen short of success in breeding by depending upon blood alone to improve his stock. He has forgotten that all of our improved breeds of horses are the product of adequate nutrition as well as intelligent breeding, suitable environment, sufficient shelter and kindly care. The use of a sire so produced endows the progeny with the propensity to develop character and qualities akin to his own and of the breed he represents. But these desirable qualities will not perfectly develop unless the progeny is given food, care and shelter such as had their effect in the production of the pure breed and its high class representative. In all pure breeds the original “scrub” blood, at the foundation, is ever seeking to reinstate itself. In short there is a tendency in all pure-bred animals to degenerate or retrogress towards original and less perfect types, and nothing will more surely and speedily stimulate this tendency than

lack of nutritious food. In the absence of sufficient nutrition, or complete nutrition, the possibilities of perfection inherited from pure-bred sires or dams but partially materialize or wholly fail to assert themselves. The well-born but incompletely nourished colt fails to develop, and at maturity is no less a "weed" than the ordinary scrub or native animal. On the other hand, if the dam is adequately nourished on complete rations during pregnancy and when nursing, and the colt, from weaning time forward, is as perfectly and fully fed, it will, in all probability, develop to the high standard of size, power, quality and character made possible by its breeding.

In addition to proper feeding it is likewise necessary to protect the young developing animal against every possible cause of debility, discomfort and unhealthiness that would tend to retard its growth. Shelter must therefore be sufficient, disease must be fought against, vermin must be prevented from sapping the constitution, and fresh air, sunlight, adequate exercise and kindly care must take a full part in perfecting the development of the animal.

OBTAINING SUITABLE STALLIONS.

The fact that mares are often bred to unsuitable stallions is, in many instances, more due to the difficulty of finding the right horse close at hand, than indifference or carelessness upon the part of the breeder. To this cause we must, to a certain degree, attribute our somewhat heterogeneous collection of mongrel and mixed-breed horse stock. A fitting start may be made in grading-up in a certain district and in a few years no horse of the same blood is to be found to carry on the good work in a right line. The consequence is that a horse of different breed, unsuitable in other respects, or even of grade, "scrub" or cross-breeding, is used until a more suitable sire can be obtained, or happens to enter the district. In other instances where grading-up has been steadily carried on for a few years in a particular district, a stallion of alien blood and breed—very likely a well-bred individual and of excellent type and quality—is, unexpectedly and unasked, brought into the district by the salesman of some importing firm. A company is formed for the purchase of the horse and the price is usually a high one, as it must cover many and sometimes questionable expenses. Were the stallion purchased the right horse for the particular district he enters; were he, in other words, of the breed that has been commenced with and that is most largely represented in the stock of the district—his price would not be too high, were it five thousand dollars. Such a stallion is a positive detriment to the district, however, if he is of a breed different to that which should be used persistently for the grading-up of stock until practical purity has been attained. It is true that his value would be incalculable in the right direction did he happen to find a home in a district where his breed-blood and prepotency were most required. The company plan of purchasing stallions is, therefore, objectionable when it forces upon a district a horse that should not be used there, no matter how excellent he may be in purity of blood and individuality of character. If, for instance, a fine, imported, pure-bred, pedigreed and recorded, sound Percheron stallion should be sold to a company of farmers who previously and, perhaps for a considerable number of years have been breeding to Clyde stallions, his use will necessarily retard progress in grading-up. It will fill the district with progeny of mixed breeding—part Clyde and part Percheron—which, on the contrary, should have been steadily progressing towards final Clydesdale purity and character. Local breeders who allow themselves to be talked or persuaded into investing in a stallion of this sort are foolish in the extreme. They should learn, and that immediately, that success cannot come from fur-

ther blending the breeds. They should recognize plainly that their proper and intelligent course should be to select and purchase *the horse they need*, and not take a step back in breeding by employing a stallion of a breed different to the one they have been using. We have nothing to say against the Percheron stallion just alluded to. At the time he was being sold to the company instanced (and we have like cases in Ontario) there existed, without doubt, a district in which he might have proved the right horse. That district would have been breeding for years to Percheron stallions and, consequently, there his blood could have been used to the best advantage. Plainly the men who had been using Clyde stallions should have united for the annual provision of a suitable Clyde stallion for use in their district and this course should have been followed year after year without a break. Were a company promoter to bring a sound suitable Clyde stallion into his Clyde district, well and good. The farmers would do well to buy such a horse, for cash, if the price were in keeping with the quality and character of the stallion and did not include an exorbitant expense account. But should no suitable Clyde stallion be on the ground, or brought in at a reasonable price, the company of farmers should not discontinue their breeding operations in a right line but should get together, subscribe the necessary cash, appoint a delegation to visit a reputable breeder or importer of Clyde horses and from his stock select a stallion suitable in every way for the work to be required of him in his district. By so doing the breeders would have an opportunity of selecting a horse true to their ideal and suited to their requirements; and, incidentally, the purchase price would in all probability be less than that asked for the "peddled" stallion.

We doubt not that any reputable breeder or importer of horses would be glad to send into any district the horse desired by a company of farmer breeders and in close accord to their requirements as regards pedigree, character, quality and price. It is as likely that the seller also would be willing for a certain difference in price, to replace the stallion, when he could no longer be used in that particular district; and, were either of these plans followed persistently, each district so acting would succeed much better in breeding-up, than under the present unintelligent and detrimental plan of repeatedly mixing breeds.

POINTS OF THE DRAFT HORSE.

Height.—A typical draft horse should stand sixteen hands high or somewhat over that height. Extra tall, leggy drafters, deficient in weight, width and quality are unlikely in the market and many of them are prone to chorea (St. Vitus' dance). Abnormally tall horses, unless wonderfully good in conformation, so that the height is not ungainly, are difficult to match and therefore not in demand in the market. Such horses are used for single work or as the middle horse of a three-horse team for hauling coal, etc.

Weight.—A draft horse should weigh sixteen hundred pounds and upward. Weight is absolutely necessary for the hauling of heavy loads. It enables the horse to derive full benefit from the strength of his muscles and tendons, adds to the effect of his levers in motion, and gives him a firm grip upon the ground. It is a burden and practically useless when not associated with perfectly developed, exercised muscles, so far as actual work is concerned, but is requisite in every draft horse offered upon the market if he is to command a high price. Where the frame shows adaptability, in a thin horse, to put on flesh he is bought by the professional feeder, who finishes him for the market. In a well developed draft horse extra condition is considered

worth twenty-five cents per pound in the Chicago market. For practical purposes the great weight of a draft horse should be made up of large, strong bones and powerful muscles throughout the frame. Fat should be discounted in buying a draft horse for work and, in judging, one should note development of muscle rather than wealth of flesh and fat. A typical draft horse should still weigh sixteen hundred pounds or over when deprived of the condition referred to.

Form.—The entire make-up of the draft horse should suggest strength for heavy hauling. He should be broad, deep, thick, round, with each part in keeping with its neighboring parts, giving an appearance of symmetry and massiveness. He should be low-down, blocky and compact, on short, strongboned, clean legs showing marked prominence and development of tendons and the legs should be properly placed and set to insure correct, straight action at the walk and trot.

Quality.—This term applies to evident refinement in character of skin, muscles, bone, tendons and hair. It infers also aristocratic breeding and all of the attributes of pure blood. It is indicated by high spirits, vigor, sprightly action, endurance, stamina and intelligence and is plainly indicated when the legs are free from meatiness, appear broad, flat, "clefty" and, if furnished with "feather," the hair under knees and hocks springs as a silky fringe from the rear of the tendons. Quality offsets grossness and combines grace with great weight and power in the best types of draft horses.

Action.—A draft horse will have to do most of his hard work at the walking gait. It is therefore of supreme importance that he should be able to walk fast without tiring, and in order to do this his action must be perfectly straight and level, joints must be easily and fully flexed, the feet must advance and be set down without deviations from a straight line. The soles of the feet should turn up and show plainly to the judge as the horse goes from him, at both walk and trot. The feet should be lifted quickly, fully and rhythmically and set down squarely and firmly. There should be no paddling, dishing, cutting or interfering; nor should the fore legs roll or the hind legs be carried too close together or too far apart. In judging of action note the movements of each leg and foot, the handling of each joint and the carriage of the entire body as the horse walks and trots around an enclosure, from the observer and to him. Lameness should be absent. The hocks should be carried well together. Rolling in front is due to too great width of chest. Stubby, stilty action in front indicates straight or too upright pasterns or shoulders, foot troubles or weak knees. Similar action of the hind legs indicates upright pasterns, unsound feet, hock disease, weak stifles, hip weakness or kidney troubles. Knee and hock action should both be free and comparatively high.

Temperament.—A draft horse should have an energetic disposition but should be free from vice, docile, tractable and intelligent. Sluggishness, associated with obesity is objectionable and induces diseases such as "grease," eczema, and "lymphangitis."

Head.—The head should be of good size in keeping with the proportions of the body, free from grossness, meatiness, coarseness, pronounced angularities.

Muzzle.—Should be fine, compact, of good quality as regards skin and hair, nostrils large and flexible and their lining and that of the partition between the nostrils (septum nasi) pink in color, healthy, free from ulcers or purple spots; discharge should be absent; bad odor suggests chronic catarrh

or a diseased molar tooth; lips should be thin, mobile but firmly pursed, not drooping.

Eyes.—Should be large, bright, mild in appearance, sound, free from cloudiness, white spots or ring, not staring and bulging as in palsy of the sight (amaurosis), each of the same color, lids free from wrinkles, discharge of tears over face is objectionable. Test eyes by gently threatening to strike them with hand. Horse should flinch under this test; pupils of eyes should be elliptical in form, not spherical, and should contract when exposed to the light on coming from a dark stable.

Forehead.—Should be wide between eyes as an indication of intelligence, and profile of face should not be too prominent (Roman nose) or too much dished.

Ears.—Should be of medium size, proportionate according to size of body, pointed, well carried, not coarse. If rigid, suspect deafness; if too alert and constantly moving, suspect eye disease or imperfect vision. They should be free from slits or other injuries and from discharging fistula at the base.

Lower Jaw.—Angles should be wide and space between jaws clean and free from abscesses or tumors. Jaws too close together mean poor masticating capabilities, and horse is usually a "hard keeper."

Neck.—Should be strong, massive, of sufficient length, well arched, covered with strong muscle, nicely and neatly fitted into head, clean at poll and throat-latch, molded evenly and snugly into withers and shoulders, sound at seat of collar, mane full and lying properly, free from sores in skin, windpipe large and prominent, jugular vein uninjured by bleeding.

Shoulder.—A majority of poorly formed draft horses have too steep shoulders. The proper type is moderately sloping and sufficient so to afford a comfortable and secure bed for the collar. Straight or other upright shoulders detract from easy action of fore legs, and are usually associated with upright pasterns. Should be smoothly and deeply covered with muscle, show no prominent angularities, protuberances, sores or tumors, and fit snugly into neck and body. Withers should be fairly high, free from sores or discharging sinuses (pipes).

Arm.—The arm is formed of the humerus and extends from point of shoulder to elbow joint. It should be strong, short, well-clad with muscles, thrown back sufficiently to bring the leg into proper place to support weight of fore quarters. Elbows should be prominent, strong, clean and not carried too close or too far from sides.

Forearm.—This portion of the body, together with the gaskin or second thigh of the hind leg, cannot well be fattened. Muscles and bones give these parts their size, width and depth. The forearm should be long, broad, wide, muscles prominent above, balance of part clean and free from meatiness.

Knees.—The joints cannot well be too large and strongly developed in each bone entering into their composition, so long as they are free from puffs, meatiness, bony growths or other unsoundnesses. Knees should be wide, deep, straight, strong, clean, properly set and not tied in under joint. Sprung knees are objectionable as are the reverse, known as "calf knees." Splints on sides of cannon bone, close up to the knee, are liable to cause lameness and are to be considered dangerous and objectionable.

Cannons.—These bones extend from knee to fetlock joint in fore and hock to fetlock in hind legs and should be large in size, short, clean, wide,

flat-appearing, free from meatiness and puffs, tendons very prominent at sides and behind. "Feather," if present, should be fine, silky, and springing from rear part only. Such hair indicates fine quality of dense bone and is usually associated with good development of strong tendons. Coarse, kinky hair, growing from rear and sides of the cannons, indicates coarse skin and spongy bone, gives the legs a round appearance and is indicative of sluggish temperament and susceptibility to grease, etc.

Fetlocks.—What has been said about "feather" applies most particularly to this joint, which should be strong, wide, deep, straight, free from puffs, interfering sores or callouses, not knuckling forward or set too far back.

Pasterns.—Formed of the long pastern bone (os suffraginis) extending from fetlock to hoof-head (coronet) should be strong, wide and moderately sloping; not short, upright and stilty looking. The average draft horse inclines to steepness of pastern and consequent stubbornness in gait. Very long, weak pasterns that bring the back of the fetlocks too near the ground, are objectionable as they cause strain upon the tendons and detract from ability to handle heavy loads. Too short, distinctly upright, pasterns are even more objectionable. The prevent springy, elastic action of the feet, and by immediately transferring concussion from the ground to the foot and bony column superimposed thereon, jar the parts and set up irritation and inflammation which are apt to result in such unsoundness as navicular disease, side bones, ringbones, quarter crack, corns, contracted heels and kindred troubles. The bone of the pastern should have a slope of about forty-five degrees and the front of the hoof fifty degrees. Upright pasterns induce stubby action and horses having such conformation wear out quickly upon the streets. Springy, elastic action comes from oblique yet strong pasterns, and the feet under such wear well on the pavements.

Ringbones are deposits of superfluous, granular bone at the upper, middle or lower portions of the pastern bone and in aggravated cases cause lameness and involve and interfere with the proper action of the fetlock joint above or with the joint between the lower end of the pastern bone and upper part of the coronet bone at juncture of horn of hoof and hair of hoof-head. They give a bulging appearance to the part of the bone affected, have the feel of bone and constitute unsoundness. They affect the pastern and coronet bones of both fore and hind feet.

Sidebones are located at the quarters, near the heels, at the juncture of the hair and hoof. They are due to the lateral cartilages (elastic plates) at these parts changing to bone (ossifying). When present they may be detected as prominent, hard, bony masses protruding above hoof at the sides of the feet towards the heels and bulging the hoof under the part involved. When sidebones are absent the cartilages can be grasped between the fingers and thumb and moved or bent from side to side as if they were formed of stout rubber. Sidebones are common in draft horses and constitute unsoundness. Horses having very wide, flat, low-heeled hoofs are most subject to this unsoundness. Stallions or mares afflicted with sidebones or ringbones should not be used for breeding purposes unless the unsoundness is confined to a single foot and known to be the result of a barb-wire cut or other injury. In the case of public service stallions a qualified veterinarian should always be employed to decide whether sidebones or ringbones are present, and he will best be able to judge whether or not the condition discovered constitutes hereditary unsoundness.

Splints are abnormal bony excrescences formed at the sides of the cannon bones where the small splint bones (metacarpals, in front, metatarsals, in hind

leg) overlies the large cannon bones. They are objectionable, cause lameness when forming, are often an indication of light bone, but ordinarily should not be deemed to constitute hereditary or transmissible unsoundness. If found on all legs, of large size and associated with other bony growths (exostoses) they may indicate a hereditary susceptibility to such bony growths (bony diathesis), and the animal should be rejected as unsound for breeding purposes.

Feet.—The hoofs should be of good size, sound in texture, waxy and healthy in appearance, free from wrinkles, ridges, cracks proceeding from the hoof-head downward, and prominent projecting growths at the toes, indicating chronic founder (laminitis). The color of the hoof is of little importance so long as the hoof is sound, fully developed, healthy and properly formed. The hoof is a continuation of the skin of the leg and takes its color from that of the skin of the coronet and pastern. Dark horn is, however, popular with many horsemen. The hoof-head should be prominent, heels wide, strong, not too close to the ground. The sole should be slightly concave, not markedly convex or flat; the frog large, healthy, elastic, free from deep cleft, bars prominent. Small, brittle, flat, weak, low-heeled or great, spongy, soft, brittle feet, as well as those that are notably unsound, should be avoided in selecting breeding horses.

Chest.—The chest should be of sufficient size, depth and width to give ample capacity for accommodation and free action of the lungs and heart. Large girth back of the elbows generally indicates such capacity, endurance, vigor and easy keeping qualities. The reverse conformation is objectionable in all horses. Great width of chest, with the forelegs set too far out, causes rolling motion and is objectionable. Width of chest should be accompanied by properly laid shoulders, arms and elbows so that the action is unimpeded and straight.

Ribs.—It is highly important that the ribs should be well sprung so that the digestive organs shall have ample room. A round, deep barrel bespeaks good digestive capacity and means strength of constitution and ability for hard work if the body is deeply and evenly clothed with muscle. The last ribs should be deep and come close up to the hip, constituting a close "coupling." With this conformation goes a low carried flank, indicating an easy keeper. The reverse—long, weak, washy, shallow coupling—indicates poor keeping qualities, tendency to scour, constitutional debility.

Back.—The draft horse should have a short, wide, thick, strong, straight back, giving room for attachment of large, powerful muscles and given its size and shape not only by spring of rib but development of the muscles alluded to.

Loins.—What has been said of the back equally applies to the loins. In stallions a weak low back will be apt to grow more pronounced in its weakness with age and service. In mares the back is naturally longer but should be strongly supported at the coupling and deep in flank.

Hips.—There is great diversity of form in the hips of draft horses. On general principles it may be said that all drafters should have wide strong muscled hips, free from prominent angles, smooth, and neither too straight nor too drooping in croup. The straight or level croup is characteristic of the thoroughbred horse and his cross-bred descendants. In draft horses the very steep, drooping croup, probably traces to the old black horse of Flanders. It is highly objectionable, as it allows less space for the attachment of the powerful muscles of the hind quarters, and is very often asso-

ciated with slouchy action of the hind legs which are advanced to far under the body when in motion. The amount of muscle upon the croup is however of even more importance than the degree of slope of the part. Great development of muscle in every direction is absolutely necessary at this part of the frame in every draft horse, and the same statement applies to the thighs and quarters which should be similarly well supplied with muscle. The tail should be well set and carried, strong, well haired, free from sores and without tumors (melanosis) on under side and about anus.

Stifles.—These joints should be strong, thick with muscle, free from dropsical swellings showing plain indentations above and below the patella (knee-cap) and properly set so that they are neither too close nor too far from the body when resting or in motion.

Gaskins.—What has been said of the forearm applies here, but in examining this part (second thigh) care should be taken to determine that "thoropins" are not present as fluctuating enlargements noticeable at each side and running under the large tendon just above the point of the hock joint.

Hocks.—The draft horse has no more important joint than this, and it is commonly the seat of many diseases or weaknesses. The hock (not "hind knee") has to withstand a tremendous amount of strain, and should consequently be large in every direction, clean in all respects, free from meatiness, puffs, mumminess, bony growths such as spavins and soft distensions termed "bog" or "blood" spavins. The hock joint should look and feel hard, firm, its constituent bones severally detectable under the fingers, its skin fine, and its tendons and ligaments prominent and free from connective tissue. A "coarse" hock, given that appearance by the size and prominence of its bones, is the best hock so long as it is absolutely free from all of the other features of coarseness and unsoundness. It should be wide and deep, viewed from the front and side. Its point should be prominent, clean and sharp, and the tendons under it straight, distinct, but free from bulging.

Bone spavin is a deposit of superfluous, granular bone upon the surface of or among the small bones on the inner, lower aspect of the hock joint, or may involve the true joint higher up or appear upon the outer aspect of the joint, high or low. The former is however the common seat of bone spavin.

Bog and so called "blood" spavins are identical, and are soft, fluctuating distensions of the synovial bursae of the joint, and giving a bulging appearance to the lower, front aspect of the joint.

Susceptibility to contract both of these conditions is transmitted by affected sires and dams. Sprain or other injury of the joint sets up the irritation and inflammation giving rise to spavins in weak hocks and those of poor conformation.

The same is true of *curb* which appears as a bulging, indurated or calcified enlargement upon the rear aspect of the hind leg, just under the hock joint and implicating the tendons and ligaments of that part.

Crooked or "*sickle hocks*" are most prone to this injury and curb which follows undue strain when at play or work.

Actual unsoundness implicating the hock joint and objectionable conformation rendering the joint liable to contract disease or become unsound, should be carefully avoided in the selection of breeding stock.

Cannons, Fetlocks, Pasterns, Feet.—What has been said relative to these points in the fore limb applies with equal truth to the like parts of the hind extremity. The cannons of the hind leg should have the same wide, flat appearance desirable in those of the fore leg.

In examining horses having hairy legs care should be taken to search for evidences of grease, such as old scars and fissures, grape-like tumors, or discharge having a foul odor. Sidebones are not commonly found on the hind coronets. Ringbones implicating the hind pasterns are as serious as those of the fore feet, from a hereditary standpoint, but the lameness due to them is more easily cured by puncture-firing and blistering.

In *spavin lameness* the horse goes out of the stable lame and works out of the lameness after going a short distance. On moving him "over" in the stall he is apt to jerk up the affected limb and the toe of the shoe will be found worn thin. The test for spavin lameness consists in lifting the foot of the affected limb, holding it up towards stifle joint for a few minutes to "shut" hock joint tightly, then dropping foot and at once trotting horse, when, if afflicted with bone spavin, he will go much more lame than was previously the case and, in bad cases, go on three legs for a rod or two.

Chorea (shivering or St. Vitus' dance) is best seen when moving the horse from one side to the other in stall or backing him out of stall. The leg is jerked up once or twice at these times and the tail and muscles of flanks may quiver momentarily. These symptoms of the disease disappear when the horse is exercised.

Cribbing, *windsucking* and *weaving* also are best discovered when the horse is in his stall, and although not certainly hereditary are highly objectionable and detrimental unsoundness.

PATRON, CHEESEMAKER, MANUFACTURER: WHAT RELATIONSHIP DO THEY BEAR TO EACH OTHER?

BY WILLIAM EAGER, MORRISBURG.

It will be noticed that I have put the subject of my address in the form of a question. At first sight you will no doubt think that the answer is a very simple one; in fact, that in the one case the first word itself, supplied it—patron. But in no sense does that word explain the relationship which I shall endeavour to make clear to you.

If there were a philologist among us here to-night, he would, I fancy, smile at the thought of what a remarkable instance of the adaptability and also the missapplication of a word is here presented to us.

If I were to ask you, What is a patron? the answer I should get from ninth-tenth of you would be, "A farmer who sends his milk to a cheese or butter factory;" and in a sense you would be right, for so is the word understood locally. But as regards the relative positions of the man who sends his milk to a factory, and the man who makes it into cheese, or butter, the word "patron" is entirely misleading. If you look up the etymological and historical meaning of the word you will readily see that it is so.

"Well what does that matter, anyhow?" I fancy some of you saying. Gentlemen, it is the whole matter, for upon a right understanding of how all of us who are interested in this great industry stand to each other depends its unqualified success. And when I tell you, moreover, that the safety, well being and happiness of society at large depends greatly upon a right understanding of the relative position of each member, you will realize, I trust, the immense importance of this question of relationship. Now, what is the relative position of the party who takes his milk to a factory, to the party who makes it into cheese? Technically, that of "customer." To prove that

I am correct in what I say, I have only to compare a cheese or butter factory to a saw or gristmill. You know that logs taken to a saw-mill to be made into lumber which is returned to the owner of the lots is called "custom work;" so likewise grain taken to a grist-mill, a very different kind of business to that of buying and selling. It is a trade definition and is understood everywhere. Now the business that the patron (I am using that word in its local sense) and the cheese manufacturer are engaged in is essentially the same as that I have mentioned as connected with a saw-mill. There is this difference, however, that whereas the millwright returns the product of the log to its owner, the cheese manufacturer sells the product of the milk for the patron. I have another reason for making this comparison which I shall refer to later. The patron and manufacturer are also in the position of two contracting parties, and it is this position to which I desire more particularly to draw your attention.

On his part, for a consideration, the manufacturer agrees to make the milk of the patrons into merchantable cheese, that is, that the cheese shall sell for the full market price. The patrons on their part agree to furnish the milk in a sweet and wholesome condition. These are the principal terms of the agreement. The manufacturer, if he is unable to make the cheese himself, hires a maker, and so as to enable him to carry out the terms of the agreement without loss to himself, binds his employee to make cheese that shall pass inspection as 'finest.' The cheesemaker is in no way a party to the agreement between the patron and the manufacturer, but he is, nevertheless, seriously concerned in the parties mentioned strictly carrying out the terms of it. I think you now begin to see what I am driving at,—what I meant when I said that the success of the industry in which we are engaged depends largely upon a right understanding of our relative positions.

Now let us see whether the terms of our agreement are carried out, and if not, what are the results of their non-fulfilment. That in many cases they are not fulfilled we known only too well, and to our cost. We will take the evidence of the cheesemaker first:—

He says, "Last spring I was engaged to make cheese in a certain factory. I had to guarantee my cheese; but I did not mind that, as the factory was well equipped, and I had had several years experience as a maker. For the first three months everything went along all right. But the first week of July, I remember, I had to work extra hard owing to the weather being very warm and the milk not being in first-class condition. The second week I worked, if anything harder. However, I did not mind that; I had to make fine cheese and I intended to do so. The Monday of the following week I got a letter from my employer, stating that the cheese I had shipped the previous week were of a bad flavour, and that in consequence I would have to stand a cut of a cent a pound. This meant that I would be charged with a loss of \$80.00; two weeks hard work and nothing to show for it, and a helper to pay into the bargain, and through no fault of my own. I had done all that it was possible to do make fine cheese, but some of the milk I had used was tainted, and it was impossible. I should, of course, have refused the bad milk, but I didn't detect the flavour, and, moreover, I trusted the patrons to give me good milk.

"There was the other week's cheese to go out. How would I fare? Just about the same as the other lot, \$75.00 cut this time, and for the same cause. That settled it. I quit. I felt sorry for my employer, for I was leaving him at a bad time, and it was through no fault of his; but I wasn't going to stand such injustice a moment longer."

So much for the cheesemaker. What has the patron to say? "I am," he says, "a patron of the factory previously mentioned. I have no complaint to make against the maker. I got the full weight of my milk. Sometimes I did not get my just proportion of whey, but that is not chargeable to the maker or to the proprietor of the factory; it is due to some of my neighbours taking more than they were entitled to. On the other hand I am not responsible for the loss, the maker says he has unjustly been made to bear. I send my milk to the factory in a proper condition. Yet I am not satisfied with the factory. Although the cheese is sold for as high a price as that of any other factory, the average quantity of milk taken to make a pound of cheese is higher, and consequently I do not get as good a return as patrons of some other factories get."

Now the manufacturer. He says, "I am the proprietor of the factory previously referred to. You have heard what the maker has said as to his loss and the cause of it, and what the patron thinks he has lost by sending his milk to my factory. I also have to tell you of losses that I have to bear, and, like the maker and particular patron, through no fault of mine. My first maker having left me, the season being half over, I had great trouble in getting another. As it was, I had to put up with one who was not first-class, with the results that most of his cheese, some through his own fault and some on account of the condition of the milk, did not pass inspection, and, of course, were cut. This maker also left me, and having no wages to his credit, I myself had to stand the loss incurred by the cheese being faulty. In addition he, having heard that tainted milk had been sent to the factory, refused to take several cans of milk that were brought to him, thereby offending the patrons who had brought them. These patrons left my factory altogether.

"As to the complaint of the patron, I recognize it as a just one; but it should not be made against me.

"In the manufacture of cheese, among other things, the product is affected quantitatively, by the quality and by the condition of the milk. In the case under notice, the lower production was due to condition.

"I have a considerable sum of money invested in my factory, and it is my aim, of course, to get as much milk to it as I can handle, and I can only hope to do so by giving my patrons the best possible returns. It is, however, impossible for me to make good every loss brought about by impure milk, and at the same time make my business a paying one. So far as the making is concerned, I guarantee that it shall be first class, and whenever it is not so, I, or my maker, have to make the loss entailed thereby good. But the loss in the production by the cause mentioned had to be borne by the sender of good milk equally with the sender of poor, unless, of course, the manufacturer makes that also good, which for the sake of keeping his investment unimpaired he sometimes does."

Well, gentlemen, we have been told the experience of the three parties concerned in the manufacture of cheese in a particular factory, and we have seen that each has been made to bear a loss unjustly. But the injury is not confined to them only. Let us trace that faulty cheese further. This kind of cheese is sold by the exporter at what is called a "concession." It goes to England or Scotland and is there sold to the retailer at the best price obtainable. Now imagine this ill-flavoured stuff on the counter of a store. A customer comes in and asks for a pound of cheese; gets some of the stuff we are speaking of; takes it home and is nearly knocked over by the smell of it; out of curiosity tastes it; takes it back to the store; learns the name of it, and then and there vows that he will never again buy cheese of Can-

adian make. So you see that not only have the patron, the maker and the manufacturer suffered loss, but everyone interested in the industry has been affected injuriously. Multiply the case we have been considering a score of times, and you will get some idea of the immense loss inflicted every year upon the cheese industry of this country. How? By nothing more or less than that some of the parties of the one part have not fulfilled their obligations. It matters not whether there is a written agreement or not; the condition is understood—milk shall be sent to the factory in a sweet and wholesome condition.

No doubt some of you are thinking that I am trying to make a case against the patron. Gentlemen, there is no case against the patrons who send their milk to the factory in a proper condition, and in a great majority of cases it is so sent, otherwise the industry would not have reached the large dimensions it has. But you know and I know that milk is often taken to the factory which should never have left the farm, and that a small proportion of this kind of milk will do incalculable mischief.

"Are there no other faults in making for which the patrons are in no way responsible?" Yes; but some of them are defects which time will remedy, and nearly all of them less harmful than those brought about by impure milk. In the other case the loss falls directly upon the manufacturer or the maker; and I venture to say that once we have got rid of the danger of impure milk being brought to the factory, the other defects will be quickly overcome, for we shall then be able to get better and more painstaking makers.

For years we have been talking about impure milk and how to remedy it, and it seems to me that all the time we have been talking around the question. I am now convinced it is only by a clear understanding of how the parties concerned stand to each other, that we can hope to bring about a successful and permanent remedy. Take the case of a man who brings his logs to a mill to be sawn for him. If the logs are sappy and full of knots, does he expect fine and clear lumber? The question is absurd; of course he doesn't. But, in effect, that is what the man who takes impure milk to a cheese or butter factory looks for—he expects his milk to be made into the finest cheese and to bring the highest price.

I am well aware that sometimes the patron has good cause of complaint against the manufacturer. The sanitary conditions of some factories are not always all that they should be. The maker, too, is not always a good workman; and the proprietor, for the sake of mistaken economy, may not provide the best of material in the way of boxes, etc., all of which may and do, prevent your getting as good return as you should. But to insist upon receiving the best of treatment at the hands of the manufacturer, you should first be sure that you are giving him the means to do so, in fact that you are carrying out your part of the agreement to the letter. It is also your concern to see that those associated with you in the supply of milk are doing nothing to impair your interest. First and foremost, to get the best results, we must have pure milk, and when we are sure of that we can, as I have already said, confidently look forward to all adverse influence being done away with.

In the business of cheesemaking, the manufacturer's interest is almost identically the same as the patron's. Each is anxious for the business to flourish and expand, and anything that works adversely to that end affects both.

I have been aiming to show the relative positions of patron and manufacture; I have tried to make known to you that in the one case the name

"patron" does not clearly indicate them. Patronage is something the Anglo-Saxon is very chary indeed of accepting. We like to feel that we have merited or earned whatever we have received; we are willing to give a fair return for all we get; we ask no favors. I have also endeavoured to show that the patron and the manufacturer stand to each other in the light of contracting parties, each having a condition to fulfil; that in every case that condition is not carried out, and I have tried to point out how the non-fulfilment of that condition has affected the industry at large. I also desire to say that I believe that the majority of the patrons earnestly endeavor to carry out their part of the contract.

How to get milk to the factory in a right condition, is no part of my present subject; but will be dealt with at a later time.

THE CARE OF MILK ON THE FARM.

By WM. EAGER, MORRISBURG.

In a former paper I referred to the production of cheese being affected by the condition of the milk. I pointed out that the patrons often do not get as good returns from the factory as they would get if their milk were free from certain faults. I will now try to show what some of these faults are, and how in the manufacture of cheese they stand in the way of getting the best results as to quantity. Most of these faults show up in hot weather.

One fault that is very common, and that affects more particularly production, is floating cream. This detriment is brought about by the milk not having been sufficiently cooled. The floating cream is, of course, weighed in with the milk, but it is impossible to embody it in the curd; in fact it goes off in the whey, and as far as the production of cheese is concerned is a distinct loss.

Old, or over-ripe milk (a trouble that could be easily avoided) produces what is called, *white whey*, which is really butter fat in a peculiar state. It is brought about by the lactic acid developing too soon to enable the curd being properly cooked, and, consequently, the curd is left too soft, and fat goes off with the whey in the form I have mentioned, namely, white whey.

Tainted milk—the worst of the faulty kind—affects the yield in that the maker, to get rid of the gas it generates, allows an excess of acid, which, as in the case of over-ripe milk, cuts the fat in such a way that it is not all embodied in the curd. Extra working of the curd made from this kind of milk also results in loss in production.

There are other kinds of milk of a faulty nature, which I need not particularize, which also cause loss in manufacture. In fact all impure milk used in the manufacture of cheese affects the product adversely to the yield. Consequently, the producer of the milk does not, on this account, get the return he would otherwise obtain. Of course the other parties interested in the industry are losers in like manner, but it is not of their interest I desire to speak on this occasion. I want to show to the dairyman that were he to send his milk to the factory in a proper condition, he would gain considerably thereby. Therefore, to secure the desired condition, we must, first of all, try to find out what are the influences which prevent it; and it is at the place where the milk is produced we must look for them.

First, then, the barn in which the cows are milked. This should be free from dirt and cobwebs: in short, free from dirt and filth of whatsoever

nature. To keep it in a sanitary condition, it should be whitewashed twice a year; and the floor should be so made that it can be well flushed with water.

Next, the cow. If she is caked with manure, and her coat thick with dust, some of which is quite likely to find its way into the pail, there is an excellent chance for germs of all kinds playing havoc with the condition of the milk. The cow should be clean, more particularly her bag and teats, which should be carefully brushed with a clean brush before milking takes place.

Now, the milking-pail. This should, of course, be clean and thoroughly scalded and rinsed after being used; and when not in use, placed where it will be well aired, but where there is no danger of germ-laden dust finding a way to it.

The cans. We should be careful to see that these are of the right kind. Those with convex bottoms are hard to clean; and where the seams are not soldered, it is almost impossible to keep them free from impurities. The seams when open afford a comfortable lurking place for germs and bacteria. First, let us have cans that are easily cleansed; then, after use, scour and wash them: use lots of elbow grease and plenty of water, cold and then hot. As with the pails, put them in a place where the pure air can make them sweet-smelling and dry.

Now for the milking. We have the barn fit, the cow free from dirt, bag and teats well brushed, the pail and cans sweetly clean: but what about the milker? He's all right. No flies, or rather no germs, on him. He has got his milking clothes on, and his hands are nicely washed for the occasion. You don't see a stream of various kinds of dirt trickling down his fingers to spoil the patrons' profit.

We have done our milking: the milk is in the cans: everything all right so far. What next? Cool the milk, cool it down to a temperature of 60 degrees. Don't guess at the temperature: be sure: use a thermometer. So far, so good. Where shall we put the milk till we are ready to take it to the factory? Near the manure pile? next the hog-pen? under the trees? any place where there are bad odors: and thus render useless all our previous carefulness? Hardly; we want to get the full benefit of our labor and expenditure, and will, therefore, put it in a place where the milk will keep sweet and pure; and as we want to act honestly towards our neighbor, in a place where, if it rains, water will not get into the milk. If we have to mix the morning's milk with that of the previous night, let us cool it to the same temperature, namely, 60 degrees. Now we're off to the factory, with a clear conscience, having done the best for ourselves and our duty towards our neighbor.

As to putting the cans of milk under trees, some of you think that that is not a very objectionable place; but it is really a dangerous place in regard to risk of bacteria-laden particles falling into the milk. In considering this question of getting milk to the factory in proper condition, we might sum up the whole argument with one word, cleanliness. In fact cleanliness is the essence of good dairying. I have tried to show how the absence of it results in loss of revenue to the patron, leaving the loss of all others interested in the industry out of the question altogether. And what I have said with regard to the manufacture of cheese applies with equal force to the making of butter: with this difference, however, that impure milk affects the product in the former case, quantitatively; in the latter, qualitatively.

You may think that to do all I have suggested would entail a lot of hard work. Well what if it does? You are working for profit are you not? It is what most of us are doing. And if you call it extra work, you can just as truly call what the extra work brings extra profit. And it means more; it means success or failure; the doing of it, success; the neglect of it, failure.

There is another factor which, of course, enters into the question of quantitative results, that is the quality of the milk; but that factor does not enter into the subject upon which I am addressing you. I would impress upon you the fact, and I cannot do it too strongly, that the getting of milk to the cheese or butter factory, in a pure state is the most important object for which we should strive. I have already shown in a former paper how great is the loss, how extensive the injury, inflicted upon all concerned when milk not in a proper condition is used for either of the purposes mentioned. Surely nothing more need be said upon the subject. The prevention is easy, and it rests with the patron. The labor it would entail is not nearly so great as it appears. I know of many cases in which all the attention to cleanliness of which I have spoken is thoroughly given; and I can assure you that the dairymen who give proper care to the milk on the farm are among the most prosperous farmers in the land.

We have for many years been preaching the gospel of purity in the way of dairying, and I am bound to say that during that time there has not been the improvement we should have liked. However, there has been enough, though of slow growth, to lead us to hope for more in the future.

Example is better than precept, it is said. I am quite sure it is more effective, and I expect much from it. I have a factory the patrons of which are all trying to excel each other in the quantity and quality of the milk they send to it. I use the Babcock test in this factory, and to its use I attribute the great improvement in the quantity and in the quality of the milk which has taken place since I first adopted it.

About six years ago, a farmer moved from a rented farm on to one in the district where this factory is situated. When he was on the first farm, he thought he was doing exceedingly well if he drew from the factory \$35 a month. After he had been sending his milk to our factory for about a couple of months, he came to me and said, "Mr. Eager, I want you to lend me some money?"

I said "Very well; do you mind telling me what you want it for?" He replied, "I want to buy some cows." I see the other patrons taking three or four cans of milk to the factory every morning, and there I am with my one can and that not always full. I can't stand the sight any longer; I am going to catch up with those fellows, that is if you will lend me the money to buy cows." I was very glad to do so.

As I have already said, that farmer before he moved was content to receive from the factory \$35 a month; in two years from the time the first came to me he was drawing over a \$100. He enlarged his herd; he improved it; and to get the best results from the test, he sent his milk to the factory in a condition such as he had never sent it before. At the end of six years he had a farm of his own.

Where I find a few farmers doing all they can to improve their herd of cows, raise the right and the cheapest kinds of food for them; see them striving to improve the quality of the milk and to get it to the factory in the best possible condition, I have great hopes for the rest of the farmers in the same district.

We read in Bible history that if a few good men had been found in a certain city, that city would have been saved from destruction. Let a number of farmers set the example of what dairying should be, and in time the rest will follow it; and if, unhappily, there be one who is quite incapable of improving his business, he will feel too uncomfortable to stay with the rest and give place to a better man.

POULTRY RAISING, FOR BOYS AND GIRLS.

By ROBERT THOMPSON, ST. CATHARINES.

This subject may be considered from two standpoints:

(1) As a means of employment for our young people in the country and in the smaller homes in the fruit and vegetable growing sections of the Province. If by this means we can get them interested in some work, they may acquire habits of thought, care and responsibility, be contented with their homes, and become useful men and women.

(2) By rearing and caring for the poultry in the proper manner, there will be a substantial source of revenue for the young people. Their parents should allow them to have any revenue from the poultry yard on condition that a careful and accurate account is kept of the cost of all feed and other expenses in connection with the flock as well as proceeds from sale of eggs and chicks yearly. This will help to fix in the boy or girl a habit of keeping accurate accounts, and the same principles will then be applied in after life to other lines of produce. This principle of accounts or bookkeeping is not now used frequently enough by our farmers and gardeners and should be learned by the young people for future application.

Poultry raising naturally attracts the young people. If in the beginning they have any strange fancy for any special breed of fowls, by all means allow them to select that breed. If they have no special choice, advise them to select one of the general utility breeds, such as the Rocks, Wyandottes, or Orpingtons. Insist on them beginning with a pure-bred flock, and urge them to keep it pure by culling out all birds from season to season that are not perfect in color, shape and type. This effort to maintain a standard of excellence will help train the young people in observation and they will soon become expert in selecting the best.

In choosing a place to keep the fowl, fix up a room in one of the out-houses or build a house specially for the poultry, which need not be expensive. Do not have the house too close and stuffy. Provide for sufficient ventilation. It is better for the health of the birds to have the house a little on the cold side in the winter, with proper ventilation, dry walls and flooring, than to have it warm, damp and close. To keep the floors dry, have a tile or storm drain around the outside of the walls with a good outlet, then put in a layer of small stone or gravel and cover with coal ashes and cement for a floor. The house will then keep warm, dry and healthful. The windows should face the south and be placed not over eighteen inches from the floor. They should be wider than high. Place the dust bath and scratching place so that the sun will stream on them from nine or ten o'clock in the morning until two or three in the afternoon. A good dust bath is made of equal parts of dry roaddust, coarse sand, and sifted coal ashes, with some carbolic or insect powder mixed in it at first and when renewing.

An incubator is profitable if two hundred or more chicks are to be raised. I prefer to allow a few hens that are brooding to sit on the nests for two or three days when the hatch is coming off and put from 25 to 30 chicks with each hen, rather than depend on the brooders. If the chicks are placed under the hens three or four at a time just after dark, they will nearly always take kindly to them; in the morning early the balance should be placed with the hen. Do not take the chicks out of the incubator until after say 48 hours or even 60 hours out of the shell. Do not feed too soon.

I find that granulated oat meal fed dry is the healthiest and cheapest feed for the first ten days. Fix up a roomy movable coop so that it can be moved at least once a week. Make a point of selling the poorest year-old birds and all the two-year-old hens about the first of July when prices are high and chicks are scarce. Have early pullets and get the yearlings to moult early. Feed well, give plenty of room and exercise, and you will have lots of early eggs. In the winter make a point of feeding moist scraps, ground corn and vegetables. See that your hens have access to sharp grit. Do not keep too many birds in a pen. A pen 12 x 12 will hold 25 birds.

I wish again to impress on fathers and mothers the necessity and importance of giving the proceeds of their flock to the boy or girl, as the case may be, in reality and not in name only. If they do so, invariably success will follow and they will have no trouble in keeping the boy or girl contented.

KEEPING OF FARM ACCOUNTS AND RECORDS.

By W. F. STEPHEN, HUNTINGDON, QUE.

This is an age of aggression and progress in all lines and professions of life, an age when we must get down to the root of all things, when we must have a complete knowledge of our business or profession, even to the minutest detail. We must analyze that business or profession from a financial standpoint and aim to find out the cost of production as far as possible. Aim to know our business and master the situation.

With the knowledge I have of the average farmer of our country and his manner of conducting business, I do not hesitate to state that one of his greatest weaknesses is a lack of business ability. Sharp at driving a bargain? Yes. Prudent in his dealings? Yes. Economical in his living? Yes; but the great majority are at a loss to know whether they are working at a profit or a loss. They do not know what their milk, beef, pork, etc., costs them per pound, and perchance they may be making a profit in the transaction, or on the other hand a loss may result.

Raising largely the raw material to put into these finished products, many consider that this raw material is not of great value; but therein is a mistake. As all our rough feed produced and fed on the farm has a market value, it is within the reach of every farmer to ascertain the approximate value at least, of all foods fed his animals per yer, per month, or per week. All grains fed should be weighed, and the amounts fed to the cows charged against them. The same should be done with the hogs and other animals. The value of all rough feeds may be estimated near enough for all practical purposes. For instance, the dairy farmer can make an estimate of all hay straw, ensilage, roots, etc., fed to his cows, together with the pasturage. All grains fed can be weighed. In this way he can strike an average of the cost of keep. If he keeps a close account of the returns in cash, he will very soon

know about what his profit is. He can do the same with his hogs, beef or whatever line of farming he may be following. At the close of the season of year, he can put cost of feed against cash received, put the value of the manure against the labor for care of flock; and he knows about how much of a profit he has made. Possibly the farmer's occupation is one of the hardest to bookkeep, for if a farmer is in a position, or has the ability, to keep an account with every field, etc., so much the better; but this entails much more work and skill than the average farmer can give to it; and while it is practicable it is not necessary that he should do so. To my mind the more simple the system the better, and a cash-book is all that is required. A system of day-book, journal and ledger is too elaborate and complicated.

It is well to keep a cash account for several reasons. It enables one to compare one season's doings and results with those of a previous year; to note what progress we are making; to find out what per cent. profit we have made during the year; or where our loss, if any, may have been; and to know when we have paid our accounts, thus insuring us against paying them the second time.

In our cash-book there should be, first, a page for the inventory once a year, say January 1st. On this page only the actual value of our land, live stock, implements, etc., should be entered, as follows:

1905.		<i>Assets.</i>	
Jan. 1.—By	100 acres land		\$5,000 00
"	3 work horses, \$100 each		300 00
"	2 colts, at \$75 and \$90		165 00
"	10 milch cows, at \$30 each		300 00
"	5 heifers, at \$20 each		100 00
			\$5,865 00

There should be entered at their respective values, any other live stock, implements, grain, fodder, etc., as well as cash on hand.

Then on the opposite page should be entered:

1905.	<i>Liabilities.</i>	
Mortgage		\$1,000 00
Money borrowed		500 00
Accounts unpaid		80 00

After deducting liabilities from assets, the farmer knows what he is worth. Any implements or stock bought go into next year's inventory.

Next he has a page for:

1905.	<i>Receipts.</i>	
Jan. 4—To	Cash for beef sold to J. B. at 5c.	\$75 00
" 7— "	500 lbs. pork sold at 8c. to A. R.	40 00
Feb. 21— "	Milk sold to factory	70 00

All moneys received should be entered on this page. Opposite that we enter all moneys expended on the farm, for interest, wages, repairs, feed or implements bought. By balancing these accounts we find what we have made from our farm during the year. There also should be a page for all moneys spent on account of supplies and furnishings for the household, a page on which to enter all moneys for personal expenses, etc., a page for all moneys given to church and charities, and also a page to enter all produce sold on

credit. For the average farmer, about 10 pages of ordinary cash-book will do a year. The system is not an expensive one and is within the ability of every ordinary farmer. In this way we may know just how much we spend on the farm, household and personal affairs; and there will likely be many surprises for us at the end of the year. The farmer's wife may go farther and keep an account of supplies such as potatoes, meat, flour, eggs, etc., that have been produced on the farm during the year. She will find this more or less interesting; and it will be shown that the cost of living on the farm is not so small as many of our farmers seem to think. The value of a system of bookkeeping is evident, when we come to compare several years' doings in this respect. And what is of equal importance and is also very convenient, is for some member of the family to enter in a book, kept specially for the purpose, the weather conditions and doings about the farm for each day; the work engaged in, date of birth of colts, calves, pigs, etc. I find this of considerable value at times. Another thing of value and interest, especially to the dairy farmer, is to keep a record of the weight and per cent. of butter fat of each cow's milk, which may be done very simply, as follows: Have a spring balance scale (which may be purchased from the Dairy Division, Department of Agriculture, Ottawa, for less than \$3.00) hanging at a convenient place in the stable or milk room. The milk pails should all be of the same weight or the milk should all be weighed in the same pail. The weight of the milk is at once recorded on the scale. The forms for entering the weight of milk may be had from the Experimental Farm, Ottawa, free of cost, by writing Mr. G. H. Grisdale for same. These may be tacked to a board and hung convenient to the scale. In this way the farmer knows how much milk each cow gives per day, per week, per month, per year; or if he does not wish to weigh every day, he may weigh the milk night and morning of one day each week, throughout the season. In order to ascertain the percentage of butter fat, composite samples should be taken and tested at intervals of 20 or 30 days, either at home or at the factory. In this way the farmer knows the value of his individual cows, as well as which ones are boarders. To know the value of a cow, her annual milk weight must be known. The only way to know this is to keep a record of her daily milk yield. Farmers to-day must be progressive, and the more progressive we are in our business the more interesting it becomes to us; and the old adage "interest lightens labor," is particularly true in its application to dairying. The more we study the details of our business the more interesting it becomes to us; the more we carry out the ideas I have attempted to put before you in this brief article, the more interesting and ennobling our business or profession becomes.

PRESS BULLETINS FROM ONTARIO AGRICULTURAL COLLEGE.

THE FARMER'S ICE HOUSE: PROF. J. B. REYNOLDS.

There is no reason why most farm houses may not have a continuous supply of ice throughout the summer. Where a stream or sheet of water is within reach, the cost is but trifling.

An ice house can be constructed very cheaply after the following fashion: Large posts six or eight inches in diameter may be sunk into the ground to support the frame work forming the walls. For a small ice house, two, or, at most, three posts on each side would be sufficient. Inside the posts two-inch plank may be nailed on, the posts and the plank

completing the walls of the storage. A door may be constructed of short pieces of plank kept in place on the inside by the ice itself and on the outside by the posts. As the ice is used the boards closing the doorway may be taken down one after the other. The roof may be made after any fashion to suit the builder. The shanty roof shingled would perhaps be as cheap and satisfactory as any.

In the filling of the ice house the floor should be covered about a foot deep with saw-dust or dry chopped straw. The ice may then be laid upon this, leaving a space all around between the ice and the wall about one foot wide. As the ice is filled in, this space should be filled with saw-dust or straw, which ever is used. As each layer of ice is completed the crevices between the blocks should be filled in with ice chips and soft snow, so as to exclude all air from among the ice. After the full supply of ice is in place the top should be covered a foot deep with straw or saw-dust.

The site for the house should be carefully chosen so that good drainage is provided. It is important that the ground below the ice should be kept dry.

A building twelve feet square and eight feet high, affording space within for ice 10'x10'x6' will contain about 15 tons of ice, which would undoubtedly be ample for all purposes on the farm. The material required to construct this building would be only a trifling cost, and a very few trips to the nearest pond or creek would bring enough ice to fill the house.

It is best to fill the ice house after cold weather, when the ice is most likely to be sound and solid. What is called rotten ice, is ice filled with air spaces, which will not last nearly as long as solid ice.

THE PRODUCTION AND CARE OF MILK IN WINTER: PROF. H. H. DEAN.

Canadian dairymen appear to have lessened their efforts in the production of winter milk; consequently we have a shortage and a period of high prices. Not many are in a position to avail themselves of the good prices now offered for dairy products of all kinds, and especially for fine butter.

Essentials for Economical Production.

(1) Fresh cows. It is unsatisfactory trying to produce milk with a herd of cows most of which have been milking during the past summer. At least one-half the cows should freshen between the first of November and the last day of February.

(2) A moderately warm, clean, light, well-ventilated stable is a great aid in the economical production of winter milk. Cold and badly ventilated stables mean added cost for feed.

(3) Cheap, succulent feed is needed. This is best got by providing corn silage, mangels, clover hay, and suitable meal. A very good ration for a cow giving 40 pounds of milk daily or making 1½ to 2 pounds of butter per day, is 30 to 40 pounds corn silage, 30 pounds mangels, 8 to 10 pounds clover hay, 4 pounds bran, 3 pounds ground oats, and 1 pound oil-cake. If possible cut the hay, pulp the roots, and mix the bulky feed together for a few hours before feeding. Add the meal to the bulky part at the time of feeding. The foregoing amounts may be divided into two portions and one-half to be given to each cow night and morning. The cows should be fed regularly and each animal should be under close observation by the feeder in order to note her appetite, response in milk flow, and other conditions.

If the feeder finds that the cow can profitably consume more than eight pounds of meal daily, then extra meal may be given. Careful feeders who weigh the milk from each cow will soon learn the limit of profitable feeding for each animal.

Care of the Milk.

If the cow be kept clean and the milk be drawn in a cleanly manner into a clean pail by a clean person and be removed from the barn shortly after and immediately strained, there is no reason why winter milk should have a "cowy odour." This "cowy odour" is usually caused by filth which drops into the milk during the milking, or is absorbed by the milk from the foul air in the stable.

Milk should be removed from the stable before it cools to the temperature of the stable air; otherwise it will absorb taints rapidly.

After straining, the milk does not usually require any special cooling other than that which takes place from the cold air, if it be stirred occasionally to prevent the cream rising and to insure uniform cooling throughout the whole mass of milk. It is also necessary to prevent the milk freezing in order to obtain the best results.

If sent to a winter creamery, it should be delivered at least three times a week. If manufactured on the farm, it should be made into butter as soon as possible after it is drawn from the cow. The longer that milk is kept before being made into butter, the poorer will be the product.

PASTURE CROPS: PROF. C. A. ZAVITZ.

The area of cleared land devoted to pasture in Ontario amounts to nearly three million acres, and that devoted to hay and clover to about two and one-half million acres annually. A large number of varieties of grasses and clovers have been grown in the Experimental Department of the Ontario Agricultural College, both singly and in combination, for pasture and for hay. The mixture of seed now used for the production of pasture for a two years' stand in the short rotation on the College farm is as follows: Red Clover, 7 lbs.; Alsike Clover, 2 lbs.; Timothy, 4 lbs.; and Orchard Grass, 5 lbs., making a total of 18 lbs. per acre. This mixture can also be used for hay, but when the chief aim is the production of hay, the Orchard Grass is not included and only 15 lbs. of seed per acre are sown.

Farmers frequently write in the spring of the year, stating that through lack of germination of the grass and clover seed, the killing of the plants by the hot dry weather of the summer, or the heaving of the clover in the early spring, the pasture crop is likely to be deficient in the coming season, and asking what they can sow in the spring of the year that will furnish the best pasture in the same season. In each of four years we conducted an experiment in testing fourteen different kinds of crops for the production of pasture in the same season in which the seed was sown. As a result of these experiments we find that we can get better returns from a combination of varieties than from any one variety sown by itself. The following mixture, when sown in the spring, is likely to be ready for use at about six weeks after the seed is sown and to give good satisfaction in furnishing pasture throughout the summer: Oats, one and one-half bushels; Early

Amber Sugar Cane, thirty pounds; and Common Red Clover, seven pounds; thus making a total of eighty-eight pounds of seed per acre.

Sometimes a farm contains a considerable amount of comparatively rough land, or fields which lie at a long distance from the buildings, and the owner is anxious to use a mixture of grasses and clovers which will make a permanent pasture. From twenty years' results in testing different varieties of grasses and clovers, both singly and in combination, we would suggest the following mixture for permanent pasture on an average soil: Orchard Grass, 4 lbs.; Meadow Fescue, 4 lbs.; Tall Oat Grass, 3 lbs.; Timothy, 2 lbs.; Meadow Foxtail, 2 lbs.; Lucerne, 5 lbs.; Alsike Clover, 2 lbs.; and White Clover, 2 lbs.; thus making a total of 24 pounds of seed per acre. Some of these varieties produce grass very early in the spring, while others are later and furnish a good bite during the hot dry weather which occurs frequently in the months of July and August. The seed can be sown in early spring, either with or without a grain crop. Such a mixture as this, when once well established on suitable land, should form a pasture abundant in growth, excellent in quality, and permanent in character.

LEADING VARIETIES OF VEGETABLES FOR A HOME GARDEN, with Notes on Methods of Cultivation: PROF. H. L. HUTT.

Too often the arrangements for the making of the farmer's home garden are neglected till too late, and especially is this true in regard to the ordering of the seeds. It frequently occurs that it is necessary to order some varieties of seeds from a distance and therefore it is well to decide early what varieties are to be planted. The following list of varieties of vegetables has been prepared with a view to aiding in the choice of kinds suitable for the home garden, and very brief culture notes have been appended to each:

Asparagus.—Conover's Colossal and Palmetto.

Plant in rows 4 feet apart and 2 feet apart in the rows. Apply manure liberally and cultivate thoroughly.

Beans.—Summer, Golden Wax; Autumn, Burpee's Bush Lima; Winter, Navy.

Sow when danger of spring frost is past.

Beets.—Globe, Egyptian Turnip; Long, Long Smooth Blood.

Sow as soon as ground is fit to work. Thin when small to 3 inches apart, and take out every other one as soon as they are large enough to use.

Carrots.—Chantenay and Scarlet Nantes.

Sow early and thin the same as beets.

Cabbage.—Early, Winningstadt; Late, Flat Dutch and Savoy; Red, Mammoth Rock.

Sow seed of early variety in hot bed about middle of March, and transplant to open ground about end of April. Sow seed of late varieties in the open ground about the end of May, and transplant about 1st July.

Cauliflower.—Extra Early Erfurt and Early Snowball.

Treat the same as cabbage.

Celery.—Early, White Plume; Medium, Paris Golden Yellow; Late, Giant Pascal.

Sow seed in seed box or hot bed about 1st of May. Pick out into flats or cold frame when about an inch high, and transplant into trenches four or five feet apart about 1st of July.

Corn.—Early, Golden Bantam and White Cory; Medium, Metropolitan; Late, Country Gentleman and Stowell's Evergreen.

Sow about 1st May and if plants are injured by cold or frost, sow again about the 24th of May.

Cucumber.—For slicing, White Spine; for pickling and slicing, Cool and Crisp.

Sow in hills about 4 feet apart when danger of frost is over.

Lettuce.—Toronto Gem and California Cream Butter.

Sow seed as early as possible and at intervals of one month for succession of crops. Thin plants to six or eight inches apart to secure good heads.

Muskmelon.—Rocy Ford or Emerald Gem and Montreal Market.

Sow seed in enriched and well-prepared soil when danger of frost is past. Hills should be five or six feet apart.

Onions.—Yellow Danvers, Prizetaker, and Red Weathersfield.

Sow seed as early as possible. The thinnings may be used as green onions.

Parsnips.—Hollow Crown.

Sow as early as possible and thin to six inches apart in row. Leave part of the crop in ground over winter for spring use.

Peas.—Early, Steele Briggs' Extra Early; Medium, Gradus; Late, Champion of England.

Sow early kinds as early as possible, and others at intervals of two weeks to obtain succession of crops.

Potatoes.—Early, Early Ohio; Late, Empire State.

Keep potatoes for planting in a warm room in the light for three weeks before planting. Plant a few for early use as soon as the ground is fit to work, and follow with others when danger of frost is past. Plant late varieties about 24th of May.

AGRICULTURAL COLLEGE NOTES ON SPRING CROPS: PROF. C. A. ZAVITZ.

Forty-three varieties of spring wheat and four varieties of spring rye were sown on the experimental plots at the College two days ago, March 29th. In 1902 the spring wheats were sown on March 27th. These are the only two seasons within the past twenty years in which the spring seeding at the College could be started in the month of March. It is generally useless to attempt to grow spring wheat in Ontario unless it can be sown as early in spring as the land is suitable, even if the seeding is followed by cold weather and snow storms.

For five years in succession, an experiment has been conducted by sowing spring wheat, barley, oats, and peas, on different dates in the spring of the year. The first seeding took place as soon as the ground was sufficiently warm and dry to work to good advantage. One week was allowed between each two seedings. The results indicate the importance of sowing spring wheat, barley, oats and peas, in the order here given, starting with spring wheat and finishing with the peas. After the first week was past, there was an average decrease in yield for every day's delay in seeding of about one and one-half bushels of oats, one bushel of barley, one-half bushel of spring wheat, and one-third bushel of peas per acre.

According to the results of experiments conducted at the College for several years, there are advantages in growing grains in mixtures for the production of green fodder, dry fodder, or threshed grain. For fodder purposes, a mixture of Siberian or Banner oats and Prussian Blue or Golden

Vine Peas in the proportion of two bushels of oats and one bushel of peas per acre has given good satisfaction. For the purpose of grain production, however, an early oat such as the Daubeney or Alaska, when mixed with the Mandscheuri barley in the proportion of one bushel (34 lbs.) of oats and one bushel (48 lbs.) of barley per acre, has given better results than either a lighter or a heavier seeding.

It is probable that there is an annual loss of fully three million bushels of oats in Ontario through the injury to the crop caused by smut. This could be largely prevented if the seed oats were immersed for twenty minutes in a solution made by mixing one pint of formaldehyde (formalin) in from forty to forty-five gallons of water. This solution has the power of killing the spores of smut and leaving the oats uninjured. If the treatment is made several days before seeding takes place, the oats should be spread on a floor and thoroughly dried; but if it is made immediately before sowing, it is only necessary to partially dry the seed. Great care should be taken to prevent smut spores from bags, bins, grain seeders, etc., becoming mixed with the oats after the formalin has been used. This treatment is easily performed, comparatively cheap, and very effectual, and if thoroughly performed, need not be repeated from year to year.

NOTES ON SPRING TILLAGE: PROF. J. B. REYNOLDS.

(1) Now is the time to observe the need of draining. The existence of pools and wet and dry patches and the general direction of the water courses should be observed in order to learn whether drainage is necessary and in what places and directions drains should be laid. The draining of farm lands should be regarded as an investment. The improvement resulting from drainage, where drainage is necessary, will return large annual dividends and will speedily discharge the capital outlay by reason of the improved texture, moisture content, and temperature of the soil, and the resulting increase in the quantity and quality of the crops.

(2) Also, now is the time to observe the benefits of fall plowing. The difference should be noted between land, especially sloping land, that has been left smooth and firm over the winter, and land that was plowed in the fall and left rough and loose. The former has by the action of the rain and snow become packed and possibly puddled, or, on steep or sloping land, has been gullied and washed out and deprived of much of its valuable material. This land, if left to itself, will soon become hard and difficult to till. The fall plowed land, however, will be in a far more mellow and friable condition, and will make an earlier and a superior seed bed.

(3) Shallow tillage should begin on land as early as possible to prevent hardening and to conserve the moisture in the subsoil. After the seeding is done, land for roots and corn or other later crops should be cultivated at once to prevent the escape of moisture and to insure a good seed bed.

(4) It is a good plan sometimes in preparing land for seeding to harrow before cultivating. This will mellow the surface and will form a better seed bed than if the cultivator is used first. If plowing is to be done, it should be done as early as possible, and as shallow as is consistent with its purpose. Too deep plowing will dry out the surface soil to a greater depth than is advisable, and by breaking connection with the subsoil will probably deprive the young crops of needed moisture.

(5) The roller should be used with care and judgment; otherwise the labor will be wasted, or worse still, harm will be done. If the seed bed is

lumpy, the lumps may be broken by rolling soon after a shower when they have been softened by the moisture. If the seed bed is dry, the roller may be used to advantage. It compacts the surface soil and thereby enables the moisture from below to rise to the surface and thus hastens germination of seed. In both these instances the roller should be followed with the harrow, if possible, in order to loosen the surface and prevent loss of moisture. It should be borne in mind in all spring tillage that the capillary movement of water is much more rapid through moist soil than through dry soil, and that compact soil will raise water to a much greater height than will loose soil. If it is desired, therefore, to bring the water to the surface, as in the case of a dry seed bed, the soil should be compacted by some such implement as the roller. If, however, as is usually the case, it is desired to check the upward movement of the water, then the soil should be loosened and allowed to dry out, so that the loose dry surface may check the upward rise of water and prevent consequent loss. If clover seed or other small seed is sown, the roller is frequently necessary, unless the seed bed is very fine. In this instance the roller serves to pack the soil close about the small seeds, and to bring them in contact with sufficient moisture to enable them to germinate.

(6) If rains have occurred after seeding, or if it has not been possible to loosen the surface soil after rolling, before the crop shows through the ground, then the harrow may be used with advantage after the crop has started. With cereals, corn, or potatoes, the harrow will do no harm to the crop, will kill small weeds that have germinated, and will further serve to establish a mulch, and thus conserve the valuable moisture for the later uses of the crop.

NATURAL AND ARTIFICIAL INCUBATING AND BROODING: W. R. GRAHAM.

While the artificial incubation of eggs and the artificial rearing of chickens are now in common practice, by far the greater part of the poultry raised throughout the country, is hatched and reared by the mother fowl, and we shall, therefore, give first, as briefly as may be, a few directions for the management of clucking hens and young chicks, touching further down on artificial methods of rearing.

Setting hens should be removed from the building or compartment in which laying stock is kept, in order to keep them free from vermin and to secure quietness and regularity during the period of incubation. The work of moving them is best done after dark, as the hens are not so likely to leave their new nests when moved at that time. The nest boxes should be from 15 to 18 inches square, and six inches deep. Fill the bottom of the boxes with earth, rounding up the corners so that the centre will be slightly hollow, and cover the earth with straw or chaff. Sometimes nest boxes are lined with Tansey, as this plant seems to be useful in keeping the nests free from vermin. If valuable eggs are being set, it is well to try the hen for a day or so on eggs of no special value, before putting the good ones under her. Cluckers should be thoroughly dusted with insect powder at the time of setting, then about 10 days later on, and again about the 18th day of incubation. Test the eggs for fertility between the 5th and 9th days. A handy testing lamp is made by tying a piece of black cloth around a lamp or lantern chimney with a hole cut through the cloth opposite the blaze. A fertile egg held opposite the hole will appear dark or cloudy, while an infertile egg will be clear.

About 24 to 36 hours after hatching the chicks should be removed from the nest and placed with the hen in a small coop. The style of coop most favored at present is triangular in shape like the letter A, 2 feet square at the bottom and 22 inches high at the peak, made of matched lumber so as to be waterproof, and provided with a movable board bottom for use early in the season when the ground is wet and cold. The feeding of the chicks is the next point that calls for careful attention. To the ordinary farmer there is, perhaps, no food superior to bread soaked in milk and squeezed dry enough to crumble readily, with a little fine gravel or commercial chicken grit placed within easy access. A mixture of the following grains in the proportions given will also be found a very satisfactory food: 15 pounds cracked wheat, 10 pounds cracked corn, 15 pounds pin-head oat meal, and 5 pounds millet seed, and a rather expensive feed but one which forces chickens along well, is Puritan Chick Feed, an excellent preventive of bowel trouble. For a soft food, equal proportions of bran, shorts, and corn meal, with half a measure of meat meal, moistened with milk or water, make an excellent mixture. Either milk or water may be given for drink, but chickens will grow faster and do better when they can have an abundance of the former. Very young chickens should be fed five times a day, but when seven or eight weeks old, the number of feeds can be reduced to three times a day. Feed as much at a time as the chickens will clean up readily in five minutes.

In artificial incubation the one essential point is a good machine. Judging from our co-operative experiments in running incubators, it does not matter much where the machine is placed so long as there is an abundance of fresh air and no direct draughts. I would suggest that operators follow the manufacturer's directions closely, at any rate for the first two or three hatches. As regards temperature our experiments have shown that a larger proportion of healthy chicks is hatched at a temperature of 101 to 105 degrees than at higher temperatures. Chickens hatched in an incubator are reared in a brooder or with broody hens. They are taken from the incubator in from 24 to 48 hours after hatching, and if they are to be raised artificially, are placed in a brooder at 95 degrees. This temperature should be maintained for the first week and after that reduced five degrees each week. The general care so far as feed and drink is concerned is much the same as for chickens raised with their natural mothers, but some special attention must be given them for the first two or three days to teach the chickens where to go to get warm after coming outside the brooder.

CARE OF A STRAWBERRY PLANTATION: H. S. PEART.

May is the best month for planting strawberries. As soon as possible after setting, the ground should be cultivated to a depth of about two inches, in order to loosen up the soil. Cultivation should be continued at intervals of about ten days during the summer, so that a fine dry earth mulch may be maintained and the weeds held in check. Runners root much more quickly in loose soil than in that which is uncultivated. Any blossoms which may appear should be pinched out before the fruit sets. Fruiting the first season weakens the plant and reduces the crop for the succeeding year. The first runners should be permitted to grow, as the earlier the runners root, the stronger the plants will be. An average of eight or ten plants from each one set should give a row sufficiently thick for a good yield of fruit. Late formed runners should be cut off because they form plants too weak to be of any value, and they also draw nourishment from the plants already formed.

Mulching is of first importance in strawberry culture. As soon as the ground becomes frozen fairly hard in the fall, the plants should be covered with a mulch of strawy manure or marsh hay. This will protect the ground from the alternate freezing and thawing, which heaves the plants out of the soil, breaking their roots and causing reduced yields. Then about the middle of April, preferably on a cloudy day, the mulch should be raked off the rows into the paths between. As the fruiting season approaches, more mulch should be put between the rows, to assist in holding the moisture and to keep the sand off the berries and the pickers.

It is seldom advisable to harvest more than one crop from a plantation, but if one desires to take a crop the second year, the old rows should be narrowed down to about six inches, the weeds and many of the old plants taken out, and just enough old plants left to start a new stand. Keep the ground well cultivated to encourage the formation of new runners, the plants which will bear the next season's crop. Then mulch again in the fall the same as the previous year.

FALL PRUNING OF VINES AND BUSH FRUITS: PROF. H. L. HUTT.

As soon as the leaves are off in the autumn, much of the pruning of vines and bush fruits may be done to better advantage than by leaving it till next spring. Much, of course, depends upon the locality. In southern sections, where no winter protection of vines and bushes is needed, the pruning may be left till some convenient time during the early spring, but in northern sections, where grape vines and berry bushes have to be laid down in the fall and covered with earth or other covering before winter sets in, it is advisable to do the pruning before such covering is necessary.

Currant and gooseberry bushes are so hardy that they need no winter protection, even in the north, and they leaf out so early in the spring that it is well to have them pruned in the fall. It is best to grow them in the bush form, allowing about six canes to the bush. And as the best fruit is borne on wood not more than three years old, it is well to adopt a renewal system of pruning, whereby one-third of the bush is renewed each year. This can be done by cutting out two of the oldest canes each year, and allowing two of the new canes to take their places. In this way the whole bush is renewed in three years. The ends of the new growth should be shortened enough to keep the bush symmetrical.

Raspberries and blackberries have perennial roots but biennial canes; that is, the roots live through a number of years, but the canes die after fruiting at the end of the second season. Some kinds have more or less of an annual fruiting habit; that is, they bear fruit and die in one season. With such bushes, then, the annual pruning consists in cutting out all the canes which have borne fruit. The new canes also should be thinned out so as to leave only six or eight of the best canes to each bush; or if the bushes are grown in the hedge row instead of the hill system, the thinning should leave the canes six or eight inches apart in the row.

As to whether the tops of raspberry or blackberry bushes should be headed back in the fall depends largely upon the locality. In sections where the canes do not kill back in the winter, they may be headed back in the fall; but where the canes have to be laid down and covered, or where they kill back more or less during the winter, it is best to leave the heading back till spring, when they can be cut back to sound wood. The height to

which sound canes should be cut back varies from three to five feet, depending upon the vigor of the bush.

There are almost as many systems of training the *grape vine* as there are kinds of grapes, but for northern sections one of the low arm renewal systems is best, as this facilitates the laying down and covering of the vines where that is necessary. In southern sections the Kniffen or one of the high arm systems is more convenient. Whatever method of training may be adopted, the main object of the annual pruning is to remove all superfluous wood and reduce the vine to just what is sufficient to bear a full crop of fruit. Thirty or forty buds is usually all that is necessary, and these should be evenly distributed over the vine.

THE GROWING OF RAPE: PROF. C. A. ZAVITZ.

Upwards of forty-five thousand acres of land were used for growing rape in Ontario in 1905. It is a crop easy of cultivation, abundant in growth, and rich in fattening properties. Owing to its broad, spreading leaves, rape has a wonderful power of smothering out weeds and is thus one of the best crops obtainable for cleaning the land.

No less than eleven varieties of rape have been grown in the experimental grounds of the Ontario Agricultural College in each of the past three years. In 1905, the yields varied from 4 to 21 tons per acre, the lightest yielder being the German variety, and the heaviest, the Large Seeded Umbrella rape. In the average of three years' experiments, the Large Seeded Common, Large Seeded Umbrella, Buckbee's Wonderful Dwarf Bonanza, Dwarf Essex, and Dwarf Victoria varieties have given the greatest yields of green crop per acre. The Dwarf Essex is one of the most reliable varieties. The German Summer (Bird Seed Rape) should never be sown for agricultural purposes, as it seeds the same season as sown, thus furnishing a poor crop for feeding and introducing a plant which is difficult to eradicate. This point should be carefully observed, as serious trouble has sometimes resulted from sowing large areas of this variety.

The most suitable soils for rape are fairly moist loams, rich in vegetable matter. Land should be prepared for rape similar to that for root crops. Soils deficient in vegetable matter should receive a coating of stable manure. A dressing of eighty pounds of nitrate of soda per acre when the rape was about two inches high, increased the yield of the crop about two tons per acre in the average results of the co-operative experiments conducted over Ontario for a period of five years.

About the month of June, large plump seed should be sown at the rate of one one-half pounds per acre in rows about thirty inches apart and to a depth of one-half to one inch. A thorough stirring of the first two inches of the ground between the rows every ten days or so increases the growth of the rape wonderfully. Flat cultivation is generally preferable.

Rape makes an excellent late summer and autumn pasture crop for fattening cattle, sheep and lambs. In one season, upwards of six hundred lambs were pastured and fattened on the Experimental Farm at Guelph. It is grown regularly as one of the crops in the short rotation. When rape is pastured by hogs there is more waste than when pastured by sheep. Several varieties of rape were fed to milch cows and all produced a taint in the milk, there being but little difference between the varieties in this respect.

Animals should never be turned on rape when hungry or when the rape is wet or frosted. There is not much danger of animals bloating if they

are turned on gradually at first, allowing free access to an old grass field, and furnished with plenty of salt. There is practically nothing gained by feeding grain to animals when on rape. Lambs gain in weight from eight to twelve pounds per month on rape alone.

If rape is cut and placed in piles in the field, it will remain in good condition several weeks. Usually it can be hauled to the stable and fed to cattle, sheep and pigs until Christmas time with excellent satisfaction.

FIGHTING GARDEN INSECTS BY THE DESTRUCTION OF RUBBISH AND REMNANTS: PROF. FRANKLIN SHERMAN.

It is well known that many of our most serious insect pests of the field and garden, pass the winter months beneath such shelter as they can find in or near the crops upon which they have been feeding. Thus many species of cut-worms, for example, pass the winter in a half grown condition beneath boards, stones, trash, or just beneath the surface of the soil. The Chinch bug often hibernates under boards, trash, etc., around the edges of grain or grass fields. The Tarnished Plant Bug, which causes a distorted twisting of the young leaves of currant, gooseberry, and raspberry, hibernates under fallen leaves. The Turnip Louse, which is the same species as the Cabbage Louse in gardens, seems to pass the winter on such living roots, shoots or other remnants of its food-plant as remain in the field.

These considerations show at once that much may be done in the fall to avoid damage in the spring and summer. If every fence row be thoroughly cleaned out, either by the plow or by fire; if every piece of trash around the gardens and fields be piled and burned; if all the dead leaves in the gardens be consigned to flames, and lastly but perhaps most important of all, if all vines, stalks, stubs, leaves and other remnants of crops be absolutely destroyed by fire or in the compost-heap, we can easily believe that there would be fewer of these insect pests next season. Even the much needed coat of white-wash on the picket fence surrounding the garden will do some good against the insects by stealing up small cracks in which insects might otherwise secrete themselves.

In the prompt destruction of all useless remnants immediately after the harvesting of the crop we have a valuable remedy which is all too little appreciated by most persons. A stalk-weevil which bores in the stems of the potato reaches maturity and escapes from the vines only after the crop is harvested and the vines are lying unheeded on the ground. On the neglected stubs of cabbage, and cauliflower plants many a brood of lice is born in the fall and "Indian Summer" season. Many a cut worm and green cabbage worm, and many a pupa (chrysalis) of the Diamondback Moth passes the winter or reaches maturity on these remnants, hence their immediate destruction is advisable.

If one lone gardener or farmer in a locality follows these suggestions while all his neighbors neglect them, his results, while none the less sure will not be as noticeable and satisfactory as would be the case if all the farmers or gardeners in the community should act together. Unity of action is always more effective than more spasmodic individual effort.

QUESTION DRAWER.

LIVE STOCK

BEEF CATTLE.

Q. Will a grade female produce as good a calf as a pure-bred for beef?

A. A. B. McDONALD, Appin: Yes. It is usually hardier than the calf from the pure-bred female.

Q. Do you get good beef from crossing the Durham with the Polled Angus?

A. The first cross is all right, but after that the results are not so favorable. I would recommend to keep the breeds in their own line.

Q. Would you recommend letting the calf suck the dam?

A. No, unless you market your calves as soon as they are through with nature's food, because the calves are usually more tender, and unless great care is taken, the sudden change from the mother's milk is often so severe that they lose the calf flesh, and when this is once lost you can never again have baby beef from that animal.

Q. Is baby beef more desirable in the British market?

A. Yes; and commands a higher figure because it is tender and more palatable than the tough and fat beef of older animals.

Q. Why do you advocate that cattle should be fed in loose box stalls?

A. Because you require the exercise and freedom for the cattle to develop the muscles in all parts of the body. This muscle is flesh and is made firm by the moving of the animal. Exercise also aids digestion and the cattle eat the cheap bulky foods with greater relish. They are hardier and can stand shipping better, and kill out better at the block. Again, when turned to grass they gain faster, one reason is because the hoofs are not so tender as when tied in the stalls.

Q. Do you advocate letting the cattle exercise out of doors each day?

A. No. Out-door exercise in cold weather is too costly, because it is at the expense of extra food to keep up the animal heat.

Q. What weight should a steer be at two years old?

A. From twelve to fourteen hundred pounds.

Q. Does it pay to feed meal on grass to the cattle you are finishing?

A. Yes; cattle which are fed meal in the stable should have it continued on the grass, otherwise the meat will lack firmness and sweetness.

Q. How do you feed meal on the grass?

A. By means of racks twelve feet long and three feet wide, made with close fitting lumber set one foot from the ground.

Q. Does it pay to cut the hay for stock?

A. Yes; as it prevents waste of food. The stock cannot throw it so easily from their mangers. You have also a better chance to mix the food.

Q. Is it profitable to mix the food?

A. Yes; as it aids digestion. When the succulent food, meal, bran and bulky foods, such as hay or straw are mixed twenty-four hours or more before feeding, a heating is brought about which would otherwise have taken place in the animal's stomach.

Q. What quantity of each food would you feed (to make a balanced food) for cattle to be finished in July?

A. 30 to 35 pounds of silage with three times the bulk of hay and straw combined, $2\frac{1}{2}$ pounds of oats and barley, mixed in the proportion of 2 bushels of oats to 1 bushel of barley, and 1 pound of bran.

Q. What foods would you use if you did not have a silo?

A. I would pulp the roots and use them in place of the ensilage.

Q. Suppose that you did not have either ensilage or roots?

A. I would quit farming. Previous to having a silo we took our own corn into the barn, well cured without dampness in the mow. Then in the winter we cut this with straw and a quantity of hay, moistened with water and used the meal and bran as suggested above.

Q. How often do you feed your cattle each day?

A. Three times a day; morning and evening, the prepared food, and at noon a little hay.

Q. Would you feed oats ground to the calves?

A. No; I would supplement bran with whole oats.

Q. Would you put sunflowers in your ensilage corn?

A. No; as the stalk of the sunflower is very hard and is of no use as a food, except the seed.

Q. Is alfalfa good for silage?

A. I would suppose that it would be, but it does not grow so rank as the corn and it is valuable as a food, without being put in the silo.

Q. What kind of a silo would you advise building?

A. A cement silo, if the gravel is convenient; if not, I would use two-inch planks or stave silo which gives as good a result as the cement in the way of preserving the silage but is not as permanent.

Q. Are not the stables colder by having them well ventilated?

A. No; as the inlet for pure air is under the floor the air becomes warmer before entering the stables.

Q. How do you force the water into the stables?

A. By means of a windmill which pumps the water into a supply tank; from there it is piped to different parts of the stable and fields where it is gauged by a float.

Q. How do you feed young calves?

A. JOHN CAMPBELL, Woodville: Sometimes skim milk to which flax seed jelly is added, and often allow calves to suckle with, at times, two calves put on one cow.

Q. At what age will the well fed beef animal give the most profit?

A. At from 20 to 28 months.

Q. Is it well to aim at keeping up regular growth in the beef making steer calf?

A. Yes; decidedly so, as only by that means could the best profits be got.

Q. Is it advisable to cross the beef breeds?

A. A single cross produces a desirable feeding animal, but the cross-bred female should never be bred again as the offspring is likely to deteriorate in size and quality.

Q. Is it more profitable for the general farmer to allow his calves to suck the dams, or should the dams be milked and the calves be fed from the pail?

A. The more profitable practice is to milk the dams and feed the calves, and further, it conduces more towards making the dams good milk producers.

Q. At what age should the young male animal be castrated?

A. During the first year of his life. By performing the operation at this time the young animals do not mind it, but if left later it takes the young animal two or three days and often a week to get around and be as frisky as usual.

Q. Should young calves be turned to pasture the first year?

A. They can be reared better by giving them the freedom of a box stall during the hot weather and turned to grass at night, as they should be taught to graze the first summer.

Q. Do you prefer having the straw for bedding cut or in the long condition?

A. Cut always. In this condition it soaks up the liquid portion of manure better, and then in every respect it is more easily handled and spread upon the land.

Q. How many animals do you prefer running together in loose boxes?

A. That depends upon the size of loose pens, but from 6 to 10 or 12 will thrive better than by having much larger numbers.

Q. What do you do to kill lice on cattle and what is the best preventive for vermin?

A. The most satisfactory treatment which I have had experience with is to take insect powder, 1 part; powdered cement, 4 parts; mix thoroughly and shake along the backs of the animals. Two or three applications will kill all. If more develop repeat the operation. The best preventive that I know of is to thoroughly clean and whitewash stables with lime every spring after animals go to grass.

Q. In selecting steers, what age and weight do you prefer?

A. GAVIN BARBOUR, Crosshill: Two years old, averaging 1,000 pounds.

Q. Have you any preference in color?

A. Roans and red. My experience has been that roans make the greatest gain.

Q. What breed do you prefer?

A. Any of the beef breeds.

Q. What about the Jersey steer?

A. The man who keeps a Jersey steer on his farm until it is two years old does not understand his business.

Q. Is it profitable to sell feeders two and a half years old at four cents per pound?

A. It may be so. But it would be more profitable to finish them at the same age and secure the price of the finished product.

Q. Do you tie your cattle?

A. Yes. I am not sure that the loose system is preferable.

Q. How often do you feed?

A. Twice a day.

Q. What hours?

A. Seven o'clock; morning and night.

Q. Would it not do just as well to feed an hour earlier at night?

A. It may. But whatever method you begin with, follow it out. Regularity is the important point.

Q. What ration do you feed?

A. 30 pounds of silage, 10 or 12 pounds of clover hay and chaff, and 5 pounds of meal per day.

Q. What kind of meal?

A. Oat meal and bran, in the commencement, and oats and barley mixed in the finishing period.

Q. Do you mix meal with roughage?

A. No, we mix roughage and throw meal on top and give it a stir with the hand. Then we know that each animal is getting just what we desire.

Q. Is this not a light meal ration?

A. It may appear so, but meal is the expensive part of the ration, and the more meal we feed the less roughage will the cattle eat.

Q. How much meal would you give a steer in the finishing period weighing 1,200 or 1,400 pounds?

A. I consider eight pounds all they are able to make good use of.

Q. Is silage preferable to dry corn?

A. Yes. Silage has a value beyond its feeding value in its succulency. In an experiment in Illinois it was found that it took 5.23 acres of dry corn to produce the same gain as 3.73 acres of silage.

Q. Would you prefer roots to corn?

A. No. I prefer both, but if I must make a choice, I'll take corn silage.

Q. Do you cut all your feed?

A. Mostly all. We feed a little long hay once a day. * Cattle relish a little variety.

Q. Does it pay to cut feed?

A. I am satisfied it does. An experiment carried on at Guelph shows that 100 pounds gain is produced for 72 cents. less with cut feed.

Q. What difference between buying and selling price do you consider profitable?

A. I am satisfied with \$1.00 per hundred weight, but get all you can.

Q. Will it pay to build a silo?

A. If you can grow corn successfully you can't afford to do without one.

Q. Will your profit on a bunch of steers pay a man's wages?

A. I consider the manure worth the labor. We cannot keep up the productivity of our farms unless we convert the raw products into a finished article.

Q. Would you feed a calf meal the first summer on grass?

A. Yes, and always when in the stable. Feeding a maintenance ration only is a poor money making business for the farmer.

Q. How many Shorthorn crosses will enable a breeder to register his stock?

A. DR. HENRY G. REED, Georgetown: It is not possible to grade up Shorthorn cattle high enough to register. They must trace back to some imported registered cow.

Q. What is the difference between the terms pure-bred, registered, and thoroughbred?

A. Pure-bred and registered mean the same. Strictly speaking, the term thoroughbred should be used only in reference to the English race horse, but it is often erroneously used to designate a pure-bred animal of any kind.

Q. In grading up Shorthorn cattle, which would you prefer as foundation stock, a native cow of no breeding or a half-bred Jersey or Holstein cow?

A. From the beef standpoint, I would prefer the native cow because I would expect a pure-bred Shorthorn sire to make a greater impression on her than on the hot blood of any of the dairy breeds. You would need to make a great number of crosses before you would breed out all trace of the hot Jersey or Holstein blood.

Q. Do you not think that a cross between pure-bred Hereford and a pure-bred Durham will produce a better grazing animal than a pure-bred of either breed?

A. I don't know, but I do know that none of the cross-bred animals, either male or female, should be used for breeding purposes.

Q. Is it safe to allow a cow with lump jaw to graze with healthy animals?

A. No. If the lump is not discharging there is no danger of contagion.

DAIRY CATTLE.

Q. If turnips taint the milk what can be fed in their place?

A. R. C. FOWLER, EMERALD: Corn silage or mangels. The very large coarse mangels are rather strong flavored, and there is some danger from them, so it is best to use some of the finer varieties. For example, the Yellow Intermediate.

Q. How do you dehorn calves?

A. D. JAMES, LANGSTAFF: By clipping the hair from about the horn; then putting some Gillett's Lye, reduced to consistency of cream, upon the place.

Q. How would you proceed in selecting dairy cows in a district where feeding cattle is of prime importance.

A. Select cattle that give milk in quantity and quality that will pay well. Have scales in the stable to weigh each milking, and get the milk tested and raise calves for dairying from the best cows thus tested.

Q. When do you feed your cows?

A. Always after milking.

Q. Do you think 6,000 pounds of milk too high a standard for a dairy cow?

A. It is not high enough; better have 8,000 or even 9,000 pounds.

Q. How do you remedy the trouble of not having the butter come in a reasonable time in churning?

A. One way is to have some of your cows freshen during each month of the year.

Q. Have you found that barley meal has a tendency to lessen the milk flow?

A. I have not, but have only fed it one year and then, with plenty of sugar mangels and ensilage.

Q. What time of the year do you prefer a heifer to come in?

A. In the fall. My experience is that the flow of milk is kept up longer.

Q. What do you recommend in the case of a cow that has a tendency to milk fever?

A. Be sparing in feed before calving.

Q. How much salt do you give a cow?

A. About one ounce a day. In summer they should have access to all the salt they want.

Q. What do you do for cows giving stringy milk?

A. A good purgative of salts.

Q. Do you find that dehorning calves makes them rough with each other?

A. I have not. Calves may be teased or so treated when young to make them so. Some cattle are naturally vicious, but I have no trouble.

Q. Would you get rid of a cow giving 5,500 pounds of milk?

A. Yes; if I could get another better to fill her place.

Q. Is separator milk injurious to calves?

A. Not if fed at right temperature, or in proper quantities; skim the froth off. Some give the calves all they will drink, which may be harmful.

Q. Can you give a cure for the Horn Fly?

A. W. C. SHEARER BRIGHT: 1. Gallon crude petroleum; $\frac{1}{2}$ gallon coal oil; $\frac{1}{2}$ gallon fish oil; 1 cupful crude carbolic acid. Mix all together and apply in a spray over the cattle 2 or 3 times a week.

Q. What is the best breed of dairy cow?

A. There is no *best* breed, as there are poor milkers in all the breeds; but you cannot go wrong if you select good types of the dairy cow, from the Holstein, Ayrshire, Jersey, Gurnsey, or Shorthorns of a milking strain.

Q. Can you get as much from a cow calving in November as if she calved in March?

A. Yes; I believe we can, as by keeping her up to normal all winter, we get an extra flow again on grass.

Q. Is it a good plan to cross dairy breeds?

A. JOHN DONALDSON, PORT WILLIAMS, N. S.: No. As a rule though, oftentimes a first cross will give excellent milking cows.

Q. Would you advise buying a Babcock test for ten cows?

A. Yes; if I could not get the skimming done at the factory.

Q. Do turnips injure the flavor of milk if fed immediately after milking?

A. Yes.

Q. Will ensilage injure the flavor of milk?

A. Never with good ensilage, but sometimes with immature corn the ensilage becomes sour and then it may have a tendency to do so.

Q. What is a cheap food on which to raise a dairy calf?

A. Feed with its own mother's milk for three weeks, then gradually change to skim milk with boiled flax seed for another three weeks; then change to grain gradually. After four months old, they will grow equally well on a mixture of 100 pounds boiled oil cake, 25 pounds ground flax, 50 pounds of low grade flour; mix all thoroughly together. Also supply some choice clover hay, bran, or crushed oats daily, with access at all times to pure, clean water.

Q. What do you consider is the best dairy breeds?

A. JOHN CAMPBELL, WOODVILLE: Holsteins, Jerseys, and Ayrshires.

Q. Would you approve of using a Shorthorn bull in breeding for dairy purposes?

A. No.

Q. Would you feed distillery slop and brewer's grains?

A. Yes, but I want them sweet and fresh.

Q. Does it pay to feed slop made of ground grains?

A. No, not if water is before the cows constantly.

Q. Do you recommend the use of stock foods as advertised?

A. No, but at times some may be fed as a tonic with profit.

Q. Do you prefer a cow having a thin narrow face?

A. I like a lean face, a wide muzzle, and a fine appearance.

Q. Do you recommend putting Lucerne into the silo?

A. M. RICHARDSON, CALEDONIA: No; I believe that since we can grow more bulk of corn per acre that it is best to silo the corn crop and cure Lucerne in the ordinary way.

Q. Can you water cattle cheaper than by growing roots for feed?

A. G. H. HUTTON, EASTON'S CORNERS: More cheaply, but not so effectively. The result of root feeding has been demonstrated over and over again.

Q. Are records made by breeds at shows, a criterion for the farmer?

A. The farmers may not be able to get anything like the results from any one of the breeds tested, still the various breeds are on the same basis and the results would indicate the relative value of the different breeds.

Q. How would you give a pound of salts to a cow?

A. DR. H. G. REED, GEORGETOWN: Dissolve the salts in about a quart of warm water, fill a large bottle, elevate the animal's head and pour in the liquid slowly so as not to choke her.

Q. How long may the afterbirth be left before removing by hand?

A. Not longer than 48 hours.

Q. Is it worth a farmer's time to make any attempt to break a case of milk fever?

A. He had better not treat the animal himself. It is now very successfully treated by veterinary surgeons.

Q. I bought a pure-bred Ayrshire cow and crossed her with a Holstein, and then crossed the progeny with a Jersey and have got first-class dairy cows.

A. You may have good dairy cows, but it is not because of your extraordinary crosses. Had you bred along the Ayrshire line in which you started you would probably have got just as good milking cows, and by keeping the breed pure, your cows would be much more valuable than your present, very much cross-bred animals.

Q. How do you account for so much waste around the inside of the wooden silo next the boards?

A. GEO. CARLAW, WARKWORTH: The boards become dry in the summer-time and when the green corn is put in in the fall, the boards absorb the moisture from the corn and make it dry and light and therefore will not pack.

Q. Do you prefer a round silo?

A. Yes. In a square silo there is always more or less waste in the corners, and in a round silo there are no corners to contend with.

Q. What is the cause for so much moisture running away from the bottom of silos?

A. F. A. SHEPPARD, QUEENSTON: A great many people, especially in the northern section, have been raising the large-growing dent varieties

or corn, which do not get well enough matured before frost comes. Better to grow Compton's Early, Longfellow, or King Phillip.

Q. What variety of corn do you think best for silo purposes?

A. L. E. ANNIS, SCARBORO': Wisconsin's Earliest White Dent, or Leaming Improved, are both good croppers, mature early, and have good ears.

Q. What makes the best silo?

A. W. C. SHEARER, BRIGHT: A concrete is most durable and may be even cheapest in the end; but costs about \$2.00 to \$2.50 per ton of capacity. The round tub silo is filling a good place, preserves its contents equally well, and only costs about \$1.00 per ton of capacity.

Q. What is the best method of cooling milk?

A. R. C. FOWLER, EMERALD: Every man knows his own facilities for cooling better than I do. You can cool with ice or cold water by setting the pails or can in it and stripping the milk so that a thick layer of cream will not form on the top. Whatever method is used, cool as low as possible, using as few implements as possible. Each one must use common sense as regards the best method.

Q. Is airing or aerating milk not better than cooling with ice?

A. No. In nearly all cases airing or aerating is only a means of cooling and is only beneficial to the extent of the cooling. In our hot summer weather the air is not sufficiently cool to bring the milk to a low enough temperature; besides this, airing, if done in an impure atmosphere, or with a large airer which is not perfectly clean, is apt to do more harm than good.

Q. Is milk likely to become contaminated while on its way to the factory?

A. Not very likely, but road dust is a bad source of infection and we are apt to get some of it into the milk. If the milk is as cool as it should be, germs will not increase until the milk is heated at the factory and then the maker understands what to do.

Is there any way of getting a better quality of tin in our pails and cans?

A. Yes; pay the price. The poor quality of tin used in our pail and cans was brought into use by the price of tin rising, and the people demanding cans at the old price. If we go to a reliable dealer and tell him that we want the very best tin, regardless of the price, we will get it and I think it would pay in more ways than one to do so. First, our can would last much longer; second, there would not be so much danger of little rust spots for filth to gather and spoil our milk.

HORSES.

Q. What, in your opinion, are the best breeds of heavy horses?

A. THOS. McMILLAN, Seaforth: The Clydes and Shires crossed upon the heavy mares of our country.

Q. Is it advisable to patronize Percheron and Belgian stallions?

A. No; these breeds do not transmit the same valuable class of animals when crossed upon the Canadian draft mares. If you have Percheron or Belgian blood to start with it is well to continue in those lines, but the great majority of our Canadian mares are of either Clyde or Shire extraction.

Q. Is it desirable or profitable to work brood mares directly after the foals are dropped, during the suckling period?

A. Not for the first two or three weeks, and preferably not for a month after foaling, and then only in an emergency.

Q. Do you consider it a mistake to blend the Clyde and Shire strains in our breeding operations?

A. Forty years experience in the crossing of these two strains in Western Ontario, has proved that it is a benefit rather than injury to do so and that deterioration in no way, neither in size, quality or desirable conformation, results from such a system of breeding.

Q. What other desirable results would accrue from the blending of these two strains?

A. The end would be that ultimately in this country we would be able to establish a distinctive breed of Canadian draft horses which is now represented by 90 per cent. of the heavy horses which are in the hands of the general farmers of Western Ontario. We are yet a young country, and if during this generation we did nothing more along this line than lay the foundation of such a breed of animals, so broad and deep that future generations would recognize the wisdom of our action, we would have accomplished much.

Q. At what age should young mares be bred?

A. In Scotland, many of their young mares are bred at two years of age, and if fillies at that age are fairly well developed there is more chance of getting started to breed at that age, and I have seen no injurious results from it.

Q. Is it injurious or dangerous to feed horses on barley or pea grain?

A. Yes. In this Province of Ontario, horses so fed are much more liable to ailments of colic and indigestion than if fed upon oats or wheat bran, which is the healthiest and safest grain food for the work horse.

Q. Should work horses be fed upon whole or crushed grain, and is it better to mix the grain ration with more bulky portion of fodder?

A. Work horses can be fed more cheaply and safely by breaking the oat grain and mixing with so much cut hay.

Q. Does it pay to fatten a work horse for sale?

A. Yes; many farmers of Western Ontario have found this a profitable business.

Q. What do you consider the best winter fodder for growing colts?

A. DR. H. G. REED, Georgetown: A small allowance of roots each day will do all right.

Q. Which is the most injurious food for horses, dusty hay or dusty oats?

A. I think probably the hay would be the worst, but they are both very bad.

Q. Does the feeding of clover hay, cured green, cause horses to be soft?

A. T. G. RAYNOR, Ottawa: No; I believe not. That is the very best way to have it cured.

Q. Have you had any experience in feeding ensilage to horses?

A. F. A. SHEPPARD, Queenston: Yes, we have been feeding it now to our horses for four years with good results. We feed a small ration of silage night and morning, mixed with a little oat chop and bran to balance it up, and feed clover hay at noon. Our horses keep in good condition and appear perfectly healthy.

Q. I have a mare which has gone blind from repeated attacks of sore eyes. Would you advise me to breed her?

A. She should not be bred, as that form of blindness is certainly hereditary and would likely appear in the progeny.

Q. If a cross is made between a pure-bred Clyde and a pure-bred Shire can the progeny be registered?

A. An animal bred in this way can be registered in the Dominion Horse Breeder's Society, but the Government stamp is never affixed to this pedigree, neither is it endorsed by the Canadian Horse Breeders' Association.

SHEEP.

Q. What line in meat-making on the farm yields the most profit?

A. JOHN CAMPBELL, Woodville: Fat lambs at present, and they do so on the average. Supply and demand make variations in the profits.

Q. What kinds of meat cost least to produce?

A. Lambs under ten months, nine times out of ten.

Q. Do you approve of roots in feeding sheep?

A. Swede turnips are the best known for growing lambs in winter. Ewes and lambs should be fed sparingly.

Q. When do you tail or castrate?

A. At 7 to 10 days tailing in done and 10 days later they are castrated.

Q. Compare profits with cattle feeding?

A. I think that it is the most profitable of all meat making.

Q. Can you sell winter-fed lambs in limited numbers?

A. A good article seldom fails to find customers, be the number large or small.

Q. When do the finished lambs usually sell at top prices?

A. February, March and April.

Q. Have you ever kept lambs to the following summer?

A. Never, as they are often sold in the States where the duty on lambs is 75 cents. and on all over the year old mark \$1.50. Thus on lambs the extra duty is saved, and the fleece on their backs goes in duty free.

Q. How many sheep should be penned together?

A. Twenty to twenty-five.

Q. What breeds are best for fattening purposes?

A. A cross between long woolled ewes and Down rams, preferably Shropshire males, as during the last ten years this strain has secured 90 per cent. of the prizes at the show at Madison Square Garden, New York, and the International, Chicago.

Q. What system of feeding do you follow in the winter feeding of lambs?

A. One feed of unthrashed peas, two feeds of turnips and one feed of clover hay each day. I aim to give rather better than 1 pound of peas in the grain and 5 pounds of turnips per day.

Q. Why is between January and May the best time for market lambs?

A. Because this is the season when the best prices can be secured, and there is room for such an advance over fall prices that to fatten them is a most profitable business.

Q. Is it not more profitable to sell off lambs in late fall?

A. No, by all means, as it is then the best profit is within reach.

Q. What are fat lambs worth at present?

A. To-day Toronto markets offer 7 cents per pound, live weight.

Q. What kind of ewes do you recommend for best results?

A. Long-wooled grade ewes of good size and quality.

Q. What breed of ram would you use?

A. A short legged, thick-fleshed, compact, Shropshire ram.

Q. What are the prospects for the near future trade in sheep?

A. The best in thirty years.

Q. How can loss by dogs be prevented?

A. By yarding in dog enclosures in barn or in field.

Q. When should lambs drop for finishing in late winter?

A. In latter part of April and early May.

Q. Do you consider the prospects in the sheep trade encouraging?

A. THOS. McMILLAN, Seaforth: In my opinion they are. I consider the sheep industry the most profitable line of live stock husbandry at the present time.

Q. What is the best season for the average farmer to have his lambs come?

A. Just about the time the ewes can be turned to pasture in spring or about two weeks before.

HOGS AND BACON.

Q. Should the floor of a pig pen slant towards the trough or the rear of the pen?

A. W. C. SHEARER, Bright: To the rear of pen, with the gutter at rear to drain off liquids.

Q. What age do you sell bacon hogs?

A. At from seven to eight months.

Q. Would it not be more profitable to make them go 200 pounds at five months?

A. No; I think that you would make a better bacon type by keeping the pig to seven months old.

Q. What is the best breed of bacon hog?

A. The long Berkshire, the Yorkshire and the Tamworth; or a cross-bred hog of any of those breeds will make a profitable bacon hog, but it is unwise to breed from the cross-bred.

Q. What do you think of artichokes for feeding pigs?

A. T. G. RAYNOR, Ottawa: They are a good feed but must be kept confined to a place where they will not sprout.

Q. What do you do with ruptured pigs?

A. Cut the pig and sow up the cut with a silk thread.

Q. At what age would you stop breeding a sow?

A. Only when she failed to raise eight pigs at a litter, no matter how old she would be.

Q. Which is the best a pure-bred or a cross-bred sow for raising bacon hogs?

A. G. H. HUTTON, Easton's Corners: That all careful breeders use a pure-bred sire is a foregone conclusion, and when a pure-bred sow is used one stands in greater certainty of securing first-class stock. On no account should a sow be used that is more than once removed from pure breeding.

Q. What is good for indigestion in pigs?

A. When roots or green feed are used, as they always should be, there will be little trouble from indigestion.

Q. What do you use in feeding your pigs?

A. Milk and barley meal are the principal feeds, but a few oats and small wheat are used occasionally with barley meal.

Q. How often do you feed your pigs?

A. Three times a day when kept in pen, twice when they are kept in the orchard and have access to the pen.

Q. How long should pigs be left on the sow?

A. From six to eight weeks, according to the season. Pigs should be allowed the freedom of a separate trough that they may learn to eat well before finally being weaned.

Q. Do you grind grain fine for pigs on the finish?

A. Yes, especially when pigs are being forced the grain should be finely ground, else a loss will be sustained.

Q. Does it pay to feed pigs until eight months of age?

A. D. JAMES, Langstaff: I have found it pays me. I get a better quality of pork by not feeding so heavy, *i.e.*, less fat, and the cost of feed is no greater than when rushed and they are less likely to be diseased.

Q. What do you use to keep pigs in order so that they will not get off their feed?

A. A mixture of charcoal or wood ashes with a small quantity of salt and sulphur.

Q. Do you feed the meal dry or wet?

A. Dry and in a separate trough, but I give them their drink feeding.

Q. How about butter in the general trade. Poor butter brings as much as good; small eggs bring as much as large ones. It is not fair, but it takes time to remedy these evils. There is no encouragement to grow the best.

A. W. S. FRASER, Bradford: Yes, there is the satisfaction of producing that which is helping to build up the market. Every one who is producing hogs of a good bacon type is enabling the packer to secure a better place in the market, by which he can offer better prices. Every one who is producing an unsuitable kind of hog is a hindrance rather than a help. On which side would you prefer to be? The good type is as easily produced as the inferior.

Q. Then the other fellow is getting as much for second-class stuff as I do for first-class. It is not fair.

A. I agree with the gentleman, but there are many things like this in the world.

If a plate were passed around here for some charitable purpose you might put on \$5.00, while some other person just as able to give would put on 5 cents. That would not be fair, but you would have the satisfaction of knowing that you had done your duty. The other fellow would know he had not. We should try to be helpers. Even in the hog raising we can show our patriotism.

Q. What advantage is there in raising the bacon hog?

A. The product of the bacon hog brings more money and the price of the bacon hog sets the price of all others.

Q. Why do the farmers do not get more for them. We have to sell the good at the same price as thick fat?

A. This is a difficult question to answer. Packers may pay more for choice hogs, but drovers have to even up the prices. Buying according to quality has led to endless friction.

Q. If you had a lot of ten hogs for sale, 8 may be first-class and 2 may be thick fat, would you not want the drover to take all at the same price?

A. This is the only farm product not sold on merit.

Q. Can you give a description of a hog house to accommodate say 30 pigs?

A. W. C. SHEARER, Bright: About 24 feet x 40 feet with a 7½ foot ceiling. Have it face the south, with good large windows. Divide into five pens of 7½ feet wide by 16 feet long. Make feed passage 5 feet 8 inches wide; have floor and troughs constructed of cement, with a slope of 4 inches on the first 12 feet from front edge of trough; then a gutter of 3 inches deep, by 28 inches wide, all along the south side. This ensures a completely dry floor, as all liquids drain readily into this. Place each window horizontally in position and near the top of the wall and also build under the window a door for allowing the hogs out in the yard for exercise and also for convenience in cleaning out. Use either stone, cement or brick for under story; and put a good frame building on top for holding straw for bedding purposes. Construct two chutes in the second pens from each end for convenience in putting down straw for bedding.

POULTRY.

Q. What breed do you think best for the farmer to raise?

A. J. W. CLARK, Cainsville: A fowl that will lay a fair number of eggs, and fatten well for the table. Rocks, Wyandottes, and Orpingtons are best suited for this purpose.

Q. Which breed would you recommend as best winter layers?

A. Orpingtons have headed the pens at the O.A.C. in egg records. Rocks and Wyandottes are good. There is more in getting a laying strain than in the breed.

Q. Which breed is best suited for the export trade?

A. Buff Orpingtons have the white leg and skin which our English friends admire. Rocks and Wyandottes are also good if fattened properly.

Q. Can the yellow skin be made white by feeding?

A. Yes. Try feeding on a ration composed of buckwheat, finely ground oats and skim milk.

Q. How long does it take to fatten chickens?

A. Three or four weeks, if crated.

Q. Can they be fattened as well without crates?

A. Yes, if confined in a small pen and kept clean. Crates are much more convenient to manage.

Q. How many chickens can the average farmer raise successfully?

A. About 200. It is better to raise that many well than to have too many half cared for.

Q. At what age should they be marketed?

A. At four or five months. They should weigh between four and five pounds at this age. The cost of producing a pound of gain after that age is much greater.

Q. Would you advise a farmer to get an incubator?

A. Yes, if he intends to raise chickens by the hundreds.

Q. Is it necessary to have a brooder with an incubator?

A. Not if you have broody hens. When the hatch comes off a hen will mother twenty chickens quite well.

Q. How would you get broody hens to take chickens from the machine?

A. Have your hens ready before the incubator is due to hatch. Put two eggs from the machine under each hen and let her hatch them and she will look after the rest when they are put with her.

Q. How soon after hatching should the chicks be fed?

A. Not for 36 to 48 hours. If the hatch has been poor from a machine do not feed for 48 hours.

Q. What is the best feed for newly hatched chicks?

A. Oat meal, bread crumbs; feed dry; give warm water. It is important that some coarse sand or fine gravel be placed where the chicks may have free access to it.

Q. How many hens can successfully be kept in one pen?

A. It would depend on size of pen. A hen should have about six square feet of floor space. Twenty-five is about the right number for a pen.

Q. What ration would you recommend for winter laying?

A. Plump oats in the morning, scattered in scratching material; roots at ten o'clock; warm mash at noon, composed of half bran and shorts mixed with skim milk, and a little animal food added; wheat at night. If weather is very cold feed corn instead. Keep each pen supplied with oyster shell and grit.

Q. What causes hens to eat eggs?

A. The want of animal food. Give them plenty of meat, and cut the end of beak off till quite sore.

Q. Do you feed milk to hens for producing eggs in winter?

A. G. H. HUTTON, Easton's Corners: No; I can secure good results without the use of milk, and am not satisfied that I get the money back, when fed to hens; whereas hogs will pay for the milk every time, so we choose the sure thing.

Q. Is it necessary to have a hen-house sufficiently warm to prevent freezing?

A. Not at all; by providing litter for abundant exercise through the day and a house free from draughts good results may be had from a cold house.

GRAINS, ROOTS, AND SOILING CROPS.

CLOVERS.

Q. What time would you sow alfalfa?

A. J. W. CLARK, Cainsville: Any time in April or May.

Q. What kind of soil is best suited for growing alfalfa?

A. It does best on a well-drained clay soil, but will grow on any soil, providing the water does not remain too long in the subsoil.

Q. How much seed is required per acre?

A. From 15 to 20 pounds.

Q. Would you sow alone or with a nurse crop?

A. With a nurse crop, provided the nurse crop is not sown too thick; about one bushel per acre.

Q. What crop would you advise as being best to sow alfalfa with?

A. Barley is the best; it does not grow so tall, and gives the clover more sunlight. Besides, it is earlier than most spring crops and gives the alfalfa a better chance to grow.

Q. Would you pasture it the first season?

A. Very little, especially late in the fall. If it is pastured while the plants are young they are more likely to be killed out in winter. It should be five or six inches in height to hold the snow and protect it.

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Q. Is alfalfa equal to red clover as a fodder?

A. Yes, it is of higher feeding value, if cut and cured at the proper time.

Q. At what age should it be cut to give the best results?

A. Just as it is coming in bloom, or not over one-third out.

Q. Would you cure it the same as red clover hay?

A. No, not quite the same. It should be cut in the morning after the dew is mostly off, tedded well, and raked up the same night, and put in small cocks while it is still tough. If left till quite dry, the leaves—which are higher in feeding value—will be lost. If left over night the dew will fade the leaves and they will lose their color.

Q. How long would you have it in cock before it is hauled in?

A. That depends on the weather. It will generally cure in two days with good average hay weather. Turn cocks over in the morning of the second day, and let them have the sun and air for a few hours and it can then be hauled in safely.

Q. How many cuttings can you get in a season?

A. From two to four, according to richness of soil; generally three.

Q. Would you recommend leaving for seed?

A. No, it is a risky crop for seed, and is too valuable as a fodder to leave.

Q. How long will it remain in the soil?

A. If your field is clean, and you have a good stand and treat it properly, it will remain ten or twelve years, or even longer.

Q. Why do you sow it so thick?

A. To get a thick stand. The stem is of a fibrous nature and if thinly seeded will be coarse and stalky.

Q. Will it affect the flavor of the milk if fed alone?

A. I have never found it do so.

Q. Would you recommend it for pasture?

A. There is no pasture that can equal it the season through. It will furnish abundant green food through the dry weather. The roots go down till they find moisture, and keep the plants growing when other pasture is dried up.

Q. Will hogs do well on it as a pasture?

A. I have had excellent results from pasturing hogs on alfalfa. It should never get the start of them. Keep it cut down should it get too high.

Q. How many hogs can be kept on an acre?

A. It will depend on the soil and size of the hog—say from 15 to 30.

Q. Is it as good as red clover for enriching the soil?

A. Yes, it will draw plant food from a greater distance down and store it in the surface.

Q. Does it assist in opening up the subsoil?

A. There is nothing to equal it. If a field is plowed up the roots decay and the subsoil is left like a honeycomb for many years.

Q. How would you break a field of alfalfa up?

A. Get a good plow with a wide steel shear; have it drawn out thin on the wing; procure a large flat file and carry it with you. When it becomes a little dull, sharpen with the file, so that it will cut the woody roots easily.

Q. What is the best time to plow it up?

A. In July or August, while the ground is dry and firm. Plow about five inches deep, so as to cut the crown off, and it will not grow again.

Q. What kind of land is best to raise alsike clover seed upon?

A. H. GLENDINNING, Manilla: Good strong clay loam that has been thoroughly cleansed the previous year by growing some hoe crop.

Q. How much seed do you sow per acre?

A. About 4 pounds of large plump, bright, well-colored seed.

Q. Do you pasture during the early part of the season?

A. No.

Q. Don't you think that it would be better to pasture some seasons?

A. Yes; if we knew in the spring that we were going to have a heavy growth. I believe that we could pasture up to about the first of June with advantage.

Q. Is it hard upon the land growing crops of seed clover?

A. No; it improves the land by the plant gathering nitrogen from the atmosphere through the bacteria that are in the tubercles that are found in the roots.

Q. Is alsike equal to red clover as a fertilizer of the land?

A. All of the clover family are nitrogen gatherers, but the red clover is deeper rooted, and thus has a better mechanical effect on the soil, by going deep down and acting as a subsoiler, and bringing back lost fertility that has been washed down beyond the reach of roots or ordinary plants. Otherwise alsike appears to give about the same results as the red clover plant in fertilizing and mellowing the surface soil.

Q. Why does not the first crop of red clover produce seed as abundantly as the second crop?

A. The clover depends upon the working of the bees for fertilization and we have very few bees early in the season. If you examine the clover heads around the fences alongside of a pasture field or bush you will find that they all contain seed from the fact that the bee in entering the field lighted upon the first flower it saw in search of food; therefore fertilization took place.

Q. Why is it that the bumble-bee is less numerous than formerly?

A. That may be accounted for to some extent by the changed conditions in our country and the habits of the bee. The bumble-bee does not live in hives or nests during the winter. Only the queens survive. They crawl in under a fence-rail or old log or chip in the bush and there pass the winter in a dormant state until the first warm days of spring, when they come forth and gather a little food from such as the soft maple and poplar. They then look for a place to start housekeeping (which is usually a deserted mouse nest) and there gather a mass of bee-bread, probably a mixture of honey and pollen, and deposit their eggs in the mass. The larva, as soon as hatched, eat out thimble-shaped spaces or cells, which in time become larger and in course of time the young bee issues forth. At first the bees are all workers, later queens appear, and still later males. The conditions of our country are changed by the clearing up of the bush, the old rail-fence is being replaced by wire, which leaves very few places for the queens to hibernate during the winter; therefore they die for want of protection.

Q. For the production of a crop of alsike is it necessary to have bumble-bees?

A. No; the honey bee is the most important agent for the fertilization of the alsike flowers.

A. Does the honey bee not cause fertilization of the red clover?

A. Occasionally it does, but not often.

Q. If the honey bee does it sometimes, why not always?

A. The tongue of the honey bee is so short that it cannot always reach the nectar in the flower of the red clover under ordinary circumstances. If the flower is very full of nectar or the corolla very shallow the honey bee may be found working on the red clover.

CULTIVATION.

Q. Do you sow timothy seed with clover?

A. JOHN CAMPBELL, Woodville: Yes, as a rule.

Q. How do you sow the seeds?

A. From the seed-box in front of the drill.

Q. At what stage do you cut clover?

A. When the first blossoms are turning brown.

Q. Do you salt clover hay?

A. No.

Q. Would you recommend sowing 15 pounds of clover seed per acre on poor land?

A. No, ten pounds are quite sufficient.

Q. How do you cure clover?

A. Cut when dry, coil when partly cured, open out in a day or two and haul in in a few hours.

Q. How do you feed clover?

A. Chaffed with straw, then mixed in a feed with ensilage, pulped roots and bran, sometimes grain, ground of course.

Q. How many pounds of clover seed would you sow per acre?

A. W. S. FRASER, Bradford: Red clover, 10 pounds; alsike, 5 pounds; alfalfa, 20 pounds.

Q. How much timothy seed would you sow?

A. I would not grow timothy at all. I don't see why farmers in these days of enlightenment grow timothy at all.

Q. Why?

A. Because we have the clovers, which are more profitable; they are land improvers, while timothy is a land robber. To put it in a few words, to produce a ton of timothy hay takes out of the soil 30 pounds nitrogen, 20 pounds phosphoric acid, 45 pounds nitrogen. These would cost if we had to buy, in the form of commercial fertilizers, \$7.50. Red clover will add to the soil for every ton grown about \$7.50 in nitrogen. Clover, when cured, contains more and is better food for stock than timothy.

Q. Does alsike improve the land?

A. Yes, but not to the same extent as the red clover.

Q. How about alfalfa?

A. It is a land improver. On dry subsoil its roots go to a great depth. It is more productive than red clover, giving three cuttings of hay in a season, and will continue for years in the land, it being perennial. Red clover is a biennial and can only be profitable for one crop. The hay of alfalfa, when well cured, has the same feeding value as bran; hence its great importance to the farmer.

Q. Is it a good plan to sow wheat on a clover sod that has only been down one year?

A. F. A. SHEPPARD, Queenston: Yes, I consider a clover sod one of the best foundations for a crop of wheat, provided the land has been well composted and the seed bed made fine.

Q. How can we start lucerne?

A. ANSON GROH, Preston: Use a properly drained soil with the surface rich, and seed with from 20 to 25 pounds of seed, and you should have success. I have not used a nurse crop.

Q. How deep would you plow?

A. I only plow sod, and that from 3 to 4 inches deep.

Q. What is your soil?

A. A sandy loam with open sandy subsoil.

Q. Do you grow the mammoth clover?

A. No; we grow the common red clover, or June clover. The mammoth is later and apt to bring the labor of harvesting on with the wheat harvest.

Q. Would it pay to seed with clover in spring to plow under in the fall?

A. D. JAMES, Langstaff: If season is favorable, yes; but if land is full of weeds it might be better not, so that it could be gang-plowed right after harvest.

Q. Would you use Canadian or American clover seed?

A. Everything else being equal, sow Canadian. You are less likely to get new weed seeds.

Q. What kinds of corn do you grow?

A. White Cap, Yellow Dent, and Improved Leaming, but after the experience of the last two years I would prefer a variety that matures earlier.

Q. Do you approve of growing alfalfa alone or with a cover crop?

A. Either will do; if growing a cover crop, only sow three-quarters to a bushel of grain, cut grain early for hay; if sown alone a crop of hay may be secured, but it should not be pastured.

Q. What grain crops do you usually seed clover with?

A. J. L. WARREN, Acton: Fall wheat, oats or barley.

Q. Which gave the best results?

A. We have had good results with all three, but probably the best with barley.

Q. Do you think it advisable to pasture clover the first fall?

A. No, unless it has made a very large growth, then it might be better to pasture it some, but not too close.

Q. When should clover be cut to give the best results?

A. When in full bloom or when one-half of the heads have turned.

Q. Why do you cut clover when the plant is green?

A. A larger proportion of the plant is digestible at this stage than when it is allowed to ripen.

Q. Will not hay cured in this way mould in the barn?

A. No, we had 35 tons cured in this way last fall and it is the best quality of hay we ever had.

Q. Does it pay to sow clover as a fertilizer for plowing down in the fall?

A. Yes, we sow with all our grain crops, but when intended for a fertilizer we sow only red clover.

Q. Does the clover crop help to kill weeds?

A. Yes, the clover will smother a large number of weeds and those that do grow are usually cut before seed is formed and are thereby destroyed.

CORN AND ROOTS.

Q. What is the better way to secure good seed corn?

A. ROBERT THOMPSON, St. Catharines: If you can get your corn crop sufficiently mature, save the best ears, strip back the husks, and hang in a dry, airy shed. This is, of course, for counties in which corn does not ripen very well. If I were buying seed corn I would prefer to buy it on the cob, when I could judge better as to the quality.

Q. What variety would you suggest?

A. A variety that will come to near maturity before frost occurs. North Star, Yellow Dent, Leaming, Salzer's North Dakota, are good ensilage corns for Perth and Middlesex.

Q. Do you prefer rows or hills?

A. I prefer hills, or more properly speaking, squares 44 inches apart each way.

Q. Is the sweet nose flint corn earlier than Leaming and Salzer's?

A. Yes, from one week to ten days.

Q. Would you shell the seed corn in the early winter or put it away by hanging in a bag?

A. I would leave it on the cob until within a short time of planting.

Q. What is your silo built of?

A. JNO. CAMPBELL, Woodville: Staves well jointed and securely fastened by dowells and strong rods.

Q. How do you cut your corn and fill silo?

A. Hire harvester to cut at a dollar per acre, and job the cutting and filling at ten dollars per day for the outfit.

Q. How sappy is it safe to cut corn for the silo?

A. T. G. RAYNOR, Ottawa: If the corn has reached the glazed condition it is safe. It is estimated that 60 per cent. of moisture is safe.

Q. What varieties of corn do you plant or sow for the silo?

A. The variety which will give the largest amount of stem and leaf and at the same time produce a good ear of matured corn.

Q. How would corn act in adding fertilizer to the soil?

A. G. H. HUTTON, Easton's Corners: Corn would serve only in the addition of humus. The nitrogen, phosphoric acid and potash in the corn crop though plowed down come first from the soil and so add nothing to the original supply.

Q. How do you prepare a seed bed for corn?

A. J. L. WARREN, Acton: A clover sod plowed in the fall, top dressed with manure in the winter and thoroughly cultivated as early in the spring as possible.

Q. What is the best time to sow corn?

A. When the ground is warm enough in the spring. We sow, if possible, about the 20th of May.

Q. What quantity of seed do you sow to the acre?

A. About 14 pounds, if the seed is good, sown in rows 35 inches apart.

Q. Do you harrow before or after the corn is up?

A. Both before and after with a light weeder.

Q. Why do you cultivate so often?

A. It helps to retain the moisture and also kills many weeds.

Q. Do you cultivate deep?

A. Yes, at first cultivate deep and close to the plant, but later cultivate shallow so as not to destroy the little rootlets which feed the corn plant.

Q. When do you harvest corn?

A. We like to have the corn well matured, in fact, we would rather risk a little frost in the fall than put it in the silo too green. In a favorable season corn sown about the 20th of May should be ready to harvest before the 20th of September.

Q. What is the best kind of seed to sow?

A. For Lake Ontario counties, Leaming, White Cap, Yellow Dent, Wisconsin Early, Cloud's Early Yellow, Compton's Early, are good varieties.

Q. How much does it cost to raise a ton of corn?

A. In a favorable season corn can be produced at \$2.00 per ton, this includes renting land, manure, labor, etc.

Q. How do you harvest your corn?

A. Usually with a corn harvester, but sometimes we cut with a sickle or hoe. When cut with the harvester you can handle with two or three less men, but when cut with the sickle or hoe you can leave less stubble and save the cost of twine, which would amount to 50 or 60 cents an acre.

Q. Do you approve of sowing clover on grain crops if you intend to plow again for grain or root crop the following spring?

A. THOS. McMILLAN, Seaforth: Yes; clover should be sown with almost every grain crop. It is much better to have the growth of clover to plow down in the fall rather than nothing.

Q. What depth should drains be put in the soil?

A. In heavy soil with clay sub-soil, a depth of 20 inches above the tile is sufficient. In deep, open, porous sub-soils they may be best put two and a half or three feet.

Q. Should corn and root land be plowed after these crops are harvested as a preparation for the following grain crop?

A. Not if the corn and roots have been kept thoroughly cultivated during the season of their growth.

Q. How much wheat do you sow to the acre?

A. D. JAMES, Langstaff: About 1½ bushels, when soil is rich. If sown in good time, it will stool out thick enough.

MANURE.

Q. Would you plow first and spread manure on top, or would you spread manure on sod before plowing?

A. ANSON GROH, Preston: Where practicable I would prefer to plow the sod first and work the manure into the surface.

Q. When should we apply the manure: will the winter time do?

A. Yes, if not spread where water accumulates and flows off, but never haul out manure without soon spreading it.

Q. What soiling crop do you recommend?

A. I have used with good results all ordinary crops, from rye to corn, but no better crop is grown than lucerne, when properly started.

Q. Is straw of any use as manure?

A. Yes, especially on heavy clay lands.

Q. How does the manurial value of pea straw compare with clover hay?

A. T. G. RAYNOR, Rose Hall: It is nearly one-third as valuable, according to a chemical analysis.

Q. How do you recommend keeping barn manure so as to avoid the least loss from leaching or fermentation?

A. JOHN DONALDSON, Port Williams, N.S.: Either by hauling to the field every day and spreading, or, as we more usually practise in N. S., in a concrete cellar under the stable, keeping pigs upon it to keep it tramped. In this way there is no fermentation, and with ventilation there are no foul odors to the stable. We do not have the basement stables, but all of our best barns keep the stock in the second story, where we get more sunlight and ventilation. We also have sufficient warmth, as we have water before our cattle all the time.

Q. How do you handle manure?

A. JOHN CAMPBELL, Woodville: Spread it as made on the land, unless the snow is too deep. In that case put 20 or 30 loads in fields in well tramped heaps to prevent heating. Spring and summer-made manure is kept in the yard in a compact and well-tramped pile, away from all cave water.

Q. Is there much loss of the valuable elements of manure through spreading on the surface in winter?

A. THOS. McMILLAN, Seaforth: No, the quicker the manure is spread on the land after being made the better, and all things considered this is one of the most desirable and necessary practice of all the operations of the farm.

Q. Does it pay to cut your bedding?

A. A. B. McDONALD, Appin: Yes, as it is then a better absorbent, and liquid manure is the most valuable.

Q. Is barnyard manure better than artificial?

A. Yes, it is cheaper, and supplies all the elements of plant food. It remains in the soil in the form of humus, and assists a rotation of crops, whereas artificial manure only assists the crop to which it is applied.

FRUITS AND VEGETABLES.

APPLES.

Q. How far apart would you plant apple trees?

A. F. A. SHEPPARD, Queenston: Never less than 30 feet: better 35 to 40 feet, if you can spare the land.

Q. Do you consider apple growing a profitable business?

A. Yes, considering the time and labor expended, an acre of apple orchard will return as much, and in nine cases out of ten, more profit than any other crop we can grow; but the orchard must have care.

Q. What do you consider proper treatment for an orchard?

A. A tree, like a man or an animal, if it is going to perform work must be fed, and to get the best results, it should be fed the kind of food it needs. The greater part of the food of the tree can be gotten from the soil by constant cultivation, which conserves moisture and sets free plant food. Supplement this with barnyard manure and wood ashes. Prune so that the light and air may circulate freely all through the trees, and spray thoroughly to protect trees from the attack of insects and fungi, and, unless your orchard is subject to extremes of temperature, which cannot be controlled, your trees will bear every year.

Q. Give a receipt for grafting wax?

A. 4 parts resin, 2 parts beeswax, and 1 part of tallow, by weight, melted together with a fire. When melted, turn into a pail of water, and when cool enough pull it like taffy, until it is smooth, then break up into pieces and lay away, it will keep any length of time.

Q. Some people around here have sprayed, but got no results?

A. This is an old complaint, which we often hear. The trouble in these cases has usually been that the work is not well done. Some people think that pointing a nozzle at a tree is spraying; in fighting sucking insects or fungous diseases you must hit them before you can kill them, and, therefore, the tree must be completely covered with the spray, which should be as fine as mist or fog. A great many people have yet to learn the difference between spraying a tree and sprinkling a tree. We want the fog-like mists or spray that dries on the leaf instead of running off.

Q. When would you prune?

A. HAROLD JONES, Maitland: The best time to prune is in the month of May or June, but for lack of time it is often necessary to have a longer period. You can prune with good results from the time the wood thaws in March until the middle of July. Pruning should be done in the spring, as if it is done in the fall the wound does not have the opportunity to heal.

Q. Would you advise scraping the trunks of the apple trees?

A. There is no special advantage in scraping the bark: it often does harm to the tree when carelessly performed. The advantage claimed is that you remove the loose bark that harbors insects and egg clusters.

Q. How do you make grafting wax?

A. Melt together $\frac{1}{2}$ pound beeswax, 2 pounds resin, and 8 ounces of oil; pour into cold water and work with the hands until a light amber color. This wax will withstand weather better than any I know, and even after being on a tree two years can be taken off and worked with the fingers and used again.

Q. Does land require to be tile-drained for the planting of apple trees?

A. JNO. DONALDSON, Port Williams, N.S.: Decidedly, if it is wet. Apple trees cannot stand wet feet. In my opinion, a sandy loam is the best soil for apple trees.

Q. Would you paint the surface where you cut off a limb?

A. Yes, to prevent the decay of the limb from exposure to the weather and rain.

Q. Do you recommend the Ben Davis variety?

A. I would not plant too largely to Ben Davis, but would continue to grow them as long as the price in the English market holds good.

Q. What do you do for tree borers?

A. Paint the tree trunks with a mixture of soft soap, washing soda and carbolic acid early in June, applying a second time a week later.

Q. What varieties of apples would you grow for this (the Georgian Bay District).

A. T. G. RAYNOR, Ottawa: Northern Spy, Baldwins, Golden Russet and Ben Davis, as long as it is in demand.

Q. Do you use the plow in cultivating the orchard?

A. Yes, early in the spring, but plow very lightly. Afterwards use disc and smoothing harrow.

Q. Would you recommend tying a weight to a limb that is growing too close or upright?

A. A. E. SHERRINGTON, Walkerton: Yes, anything that will bring it to its place.

Q. Would you puddle trees in?

A. No, I do not like it, if you have to water, fill the hole half full, then put in roots and fill.

Q. Do you prune the head when planting?

A. Yes, shape head of tree and cut back to balance with roots.

Q. Would you cut back the roots when planting?

A. Yes, cut off all bruised or broken roots, giving a beveled cut from under side of root.

Q. Is there any use growing apples when we cannot sell them?

A. ROBERT THOMPSON, St. Catharines: There is no profit in simply letting your orchards grow wild and expect the buyers to come and give you fancy prices for your fruit. It would be better to take care of the orchard, by pruning and spraying. Then work together in selling by co-operating. Appoint some one to sell the fruit and hire competent packers so that the fruit will be uniform.

Q. Will apples grow as large when the orchard is not cultivated?

A. J. L. HILBORN, Leamington: If some manure or litter is used under the trees every three or four years to prevent the sod from getting tough, and hogs have the run of the orchard to take all fallen fruit, excellent fruit can be grown and much cheaper than by cultivation.

Q. If an orchard is very thick should it be heavily pruned?

A. I would never prune heavily at any time, if it is very thick I would remove a portion this year and additional next year. It is better to be three years taking it out, if very thick.

Q. What varieties of apples are best for market?

A. One should be guided somewhat by local conditions, and plant mostly of the varieties that succeed in that vicinity. Where I am acquainted with conditions I would plant Baldwin, Spy, Hubbardston, Blenheim, Ben Davis, Wealthy and Duchess. The three latter I would use as fillers, as they come into bearing early, and would repay the total cost of orchard before one would need to remove them.

Q. What distance apart do you advise planting apple trees?

A. I would plant the permanent varieties 36 by 40 feet, and plant a row of fillers between them in the widest space, and remove these when they began to crowd.

Q. What varieties of apples would you recommend planting as an orchard of sweet ones for fattening hogs?

A. I would recommend about equal quantities of Golden, Sweet, Paradise, Winter Sweet, and American Pippin.

Q. In grafting an apple orchard is it best to do it all in one year, or should one be two years in doing it?

A. It is best to graft branches of about the size of one's wrist on large trees, and, as a rule, one would not require to graft more than one-third of the branches, and, by removing a portion of the remaining branches each season for two or three years, the trees will not suffer a very severe check.

Q. What soil is best for an apple orchard?

A. Apples succeed well on almost any soil that will produce good grain and other crops.

Q. Is not the freight rate to the Northwest a serious drawback to the apple business?

Q. Yes, the rate on apples is higher than it should be, ship when you will, but we are getting improvements along that line also.

Q. What is the best crop for the orchard?

A. I like rape and clover mixed, if one is going to plow the orchard, but we do not plow our peach orchards, so use turnips in young orchard and oats after trees come into bearing, as these are sure to be killed with the winter and leave the land in excellent condition to be worked with the cultivator.

Q. Which are the best varieties for export trade?

A. JOHN CAMPBELL, Woodville: Spy, Ben Davis, King, Greening and Baldwin.

Q. Which varieties do you recommend for local and Northwest trade?

A. Gravenstein, Spy, Baldwin, Greening and Golden Russet.

Q. What about the Spy and King?

A. J. L. HILBORN, Leamington: The Spy is usually a profitable variety after it acquires age, but it does not begin bearing as early as other sorts. If one wishes to grow Spy the quickest way to get bearing orchard is to plant Talman Sweet, and, when large enough, graft them. The King is an excellent apple, but I would not advise any one to plant it, as the tree is not very hardy, is a shy bearer, and fruit is usually affected with codling moth, and often with blemishes.

Q. Should one plant the Bottle Greening?

A. I think not. There are already too many green apples grown, and, as one can grow good red apples just as easily as green ones, I see no excuse for planting the latter, as the red fruit has the preference in any market. One of the greatest difficulties which the dealer in Canadian apples has to face is the fact that far too many varieties are grown, and why continue planting so many.

PEACHES, PLUMS, AND CHERRIES.

Q. Among the good varieties in peaches which are the hardiest in bud?

A. J. L. HILBORN, Leamington: New Prolific; Lemon Free; Crosby; Banner; Kalamazoo; Dewey.

Q. Why are clingstone peaches grown; have they any advantage over freestone?

A. So far as I know clingstones are not grown in Canada except for first early, they come in about two weeks ahead of the freestone varieties.

Q. Do they spray for peach curl?

A. Yes, we spray early with blue vitrol solution, 2 pounds vitrol to forty gallons water, should be applied before middle of April.

Q. What do you do to prevent black knot on plums or cherries?

A. F. A. SHEPPARD, Queenston: Black knot is a fungous growth and is spread by germs that ripen on the knot and are carried by the wind to the other trees where they take root and grow. Spraying with Bordeaux mixture will kill the pores, and we also make a practice of cutting off and burning all young knots before they ripen seed.

Q. What distance apart would you recommend for setting trees when planting a cherry orchard?

A. W. E. A. PEER, Freeman: It has been a frequent mistake in setting out cherry orchards to have the trees too close together. Cherry trees, particularly sour varieties, will not stand crowding together. The limbs that are shaded much soon lose their vitality and die, and the trees become a mass of straggling arms with tufts of branches at their ends. The

sweet varieties of cherries make larger trees than the sour class, and consequently should be planted farther apart. When setting out an orchard of sweet varieties, I would plant them 25 or 30 feet apart, using as fillers smaller and earlier maturing trees, such as plums or the Morello type of cherry, which will have run their course and may be removed by the time the sweet cherries are large enough to occupy the space. In setting out sour cherries, 15 or 18 by 20 feet has proven a very satisfactory distance.

Q. Do you cultivate your cherry orchards or are they better without it?

Q. For years this has been an open question with many. The fact that for a long time the bulk of the cherries grown in this country have been doing well in fence corners and out of the way places is accountable for the theory that the soil does not require cultivation. Orchards that have been properly cultivated respond to the treatment as readily as do other fruits. The trees make a better growth, and finer fruit can be produced where cultivation is followed. Cultivation should cease when the fruit is matured, and the land sown to a cover crop, for protection to the soil, and to supply humus when plowed under in the spring. Do this plowing in the spring as soon as the ground is ready, and resume cultivation.

Q. What would you do with cherry trees such as you saw when coming to this meeting?

A. Cut them down. The scene which prompted this question is one which is too frequently met with in this country. It was a badly neglected garden, containing among other things several old plum and cherry trees. Surrounding these had sprung up a wilderness of suckers all more or less (chiefly more) badly infested with black knot. The condition of the trees rendered their commercial or domestic value of little account, while the black knot they contained made them not only an eye sore, but a curse to the community. After the visitation of black knot, which destroyed or disfigured the cherry trees several years ago, steps were taken in many sections to enforce the Black Knot Act. Owing to the enforcement of this Act the knot gradually disappeared to such an extent that the inspectors were withdrawn. Since then many growers of these fruits have become careless; with the result that the disease is slowly but surely on the increase, and if growers do not persistently combat this evil there is every indication that history will repeat itself with the same disastrous results.

Q. What is your opinion with regard to fruit trees growing in fence corners and out-of-the-way places?

A. If the trees are properly cared for there can be no real objection, but it too often happens that such trees are neglected. They are often seedlings or worthless varieties, that do not give sufficient returns to warrant any expenditure of time and money in spraying, pruning, or otherwise taking care of them. The insects or fungous diseases that such trees are subject to find in them a congenial place to feed, and breed and develop. From these breeding grounds they spread out and attack more valuable trees and orchards. Farmers and fruit growers should recognize the fact that if they are going to succeed in producing prime fruit in a maximum quantity they must resort to spraying and other means to control insect pests and fungus diseases that prey on their crops. This warfare will require an expenditure of money and labor. It will not pay to spray worthless plants, such as poor seedlings, unprofitable varieties, or trees which have become valueless through age or other reasons. It will not pay to allow them to remain unsprayed and become breeding grounds for pests that may in time infest the better trees, and thus offset the work that has been done. To

overcome this difficulty, it is necessary to destroy all such trees and plants if the fruit grower is going to make any decided advance in controlling the pests with which he has to deal.

SMALL FRUITS.

Q. What varieties of strawberries would you recommend for setting out a small patch for private house?

A. W. E. A. PEER, Freeman: Select varieties that are giving good results in your neighborhood, upon soil and conditions similar to your own. By testing new varieties along with these from year to year, and discarding those that prove least desirable, you will ascertain by actual experience what varieties suit your conditions. Generally speaking, it would be advisable to avoid planting varieties that are imperfect in their blossoms, as these have to be planted with perfect blossoming kinds in order to ensure pollen action. Even then there is a danger that the varieties selected may not be suited to each other, and the fertilizing of the blossoms be incomplete, thus entailing a certain amount of loss to the grower.

Q. How long do you allow your strawberry beds to remain in bearing?

A. I make it a practice to set out a new bed of strawberries each spring. If the bed is in a satisfactory condition after the first crop is harvested, I clear it up and put it into shape to last a second season, after which it is plowed under. If the bed, after the first crop is harvested, shows any disposition to fill up with grass or other undesirable weeds difficult to control in a strawberry bed, I find it pays to plow it up at once and utilize the land for other purposes.

Q. What do you consider the best commercial varieties of raspberries, and how do you grow them?

A. I consider the Marlboro and Cuthbert among the leading varieties for this purpose. The Marlboro is a good early berry and not so rank a grower as the Cuthbert, and bears its fruit more on the surface, thus making it easier to gather. It is, however, more exacting in regard to location and soil, and will frequently fail where the Cuthbert will do well. I plant in rows six feet apart, and allow canes to develop along the rows, making a narrow hedge. I remove the old canes as soon as the fruit is picked, also the weak canes, so as to give the fruiting canes a chance to develop. In the spring, head back these canes to about $3\frac{1}{2}$ or 4 feet in height; and keep well cultivated.

Q. What are the best varieties of strawberries for home use?

A. F. A. SHEPPARD, Queenston: In planting strawberries for home use we should aim to extend the ripening season as much as possible. For that reason I would plant some of the earliest, some medium season and some late ripening varieties. Three good varieties are Bederwood, Clyde and Williams, in the order named.

Q. How do you plant your strawberries?

A. Plant with a spade in what we call the matted row. Rows four feet apart, and plant two feet apart in the rows. Let them fill up between the plants and spread out sidewise until the rows are about 15 inches wide.

Q. How many crops do you take off a strawberry bed?

A. Only one. It is easier to plant a new patch each year than to clean up the old one, and you get larger crops off the new patch.

Q. How much of a patch would be required for an ordinary sized family, both for fresh fruit and to do some canning?

A. F. A. SHEPPARD, Queenston: That will depend upon the capacity of the individual members of the family for strawberry eating. A good rule to go by is as follows:—

We plant our rows $3\frac{1}{2}$ feet apart and the plants 2 feet apart in the row, when they begin to run we let them fill up between the plants into a matted row and extend out sideways until the row is a foot wide, then every foot of row should produce a quart of berries. The strawberry season should last about 25 days. An ordinary family will use four quarts a day, which will be one hundred quarts; then say fifty quarts for canning, so that you would need about 150 feet of row or about 75 to a 100 plants.

Q. What varieties of raspberries would you recommend?

A. Marlboro and Cuthbert for red, Golden Queen for yellow, and Gregg for black.

VEGETABLES.

Q. How many bushels of tomatoes do you get per acre?

A. J. L. HILBORN, Leamington: Our tomatoes are grown for early market and we do not expect as heavy a yield as of later tomatoes, usually about 300 bushels per acre.

Q. How do you save your tomato seed?

A. By splitting the fruits with a knife and pressing the seeds and pulp into an open vessel which we keep in a warm place for two or three days until it is quite sour, then add water and beat well to separate pulp from seeds. The good seeds settle to the bottom; pour off top and repeat until seeds are clean.

Q. What time do you set early tomato plants in the field?

A. We watch weather conditions closely and plant as soon as we think danger of frost is past. Usually we set part of ours the first week in May and hold the balance for a week or two.

Q. When do you get your first tomatoes?

A. We usually get a few baskets the first week of July.

Q. What varieties of melons are best for market and home use?

A. For early watermelon I would plant Peerless and Fordlock; best midseasons for home use, Keleckley's Sweets; for extra large melons, plant Black Bolder. The musk melons most in favor are Paul Rose, Princess, Osaga, of the yellow-fleshed sorts; and Hackensack, Long Island Beauty and Rockyford of the green-fleshed sorts.

Q. How do you cut your seed for potatoes?

A. HAROLD JONES, Maitland: I select medium sized smooth potatoes and cut two or three eyes to the piece, which gives you a good strong seed.

Q. Do you use lime or plaster on cut seed?

A. I have not had much experience myself, but Prof. Zavitz has proved by experiment for a number of years that dusting cut seed with land plaster has increased the yield in every case.

Q. Do you advise hilling up?

A. If the ground is put in a sufficiently mellow condition it is not necessary to hill up, as the potatoes will not nose out to any extent; and besides hilling has a tendency to dry out the land and consequently reduce the yield.

Q. When do you spray?

A. I spray for bugs with Paris green as soon as I see the eggs commencing to hatch. For the blight I commence spraying with Bordeaux and

Paris green about July 15th and repeat every ten days or two weeks until the first of September, four or five applications in all.

Q. When do your vines die?

A. Not until the frost kills them in the fall, that is for the main crop or late varieties.

CANNED FRUITS.

Q. What is the best recipe for unfermented grape juice?

A. ROBERT THOMPSON, St. Catharines: Take 20 pounds grapes, crush stems and all; add a little water, put on the stove and bring to a boil. Strain through a colander, rinsing with water to take out all juice. Strain over night by allowing it to drip through a jelly bag. Add 6 pounds of granulated sugar and water enough to make three gallons. Put on the stove, bring to a boil for five minutes, bottle and seal while hot. When opened, if for drinking, add equal quantity of cold water.

Q. How can corn be canned to make it keep?

A. Gather the ears when just ready for roasting. Cut the corn off the cob with a sharp knife into a sealing jar. Scrape the pieces of the corn remaining on the cob with the back of a knife into the jar. As the jar is filling pound the corn tight so that the milk covers the corn. Continue this until the jar is full. Screw on the cover over the rubber tight. Place the jars in a boiler on a board that is full of holes; fill with water until the jars are three-fourths covered with the water, boil for three or four hours according to the strength of the fire. Lift out the jars and try and tighten the covers still more by screwing the cover if possible tighter. Set away in a dark closet.

Q. Are peas and tomatoes done in a similar way?

A. The peas are put in the jar and the jar filled with water, and the top screwed on tight and boiled the same length of time. The peas should not be too old. Tomatoes are gathered when ripe and scoured, peeled, and all green portions taken off; placed in jars and boiled three hours.

Q. What are the ingredients of a good tomato catsup?

A. Take $\frac{1}{2}$ bushel tomatoes, $\frac{1}{2}$ pint vinegar, $\frac{1}{4}$ pound salt, a little red pepper, $\frac{1}{4}$ pound black pepper, $\frac{1}{4}$ pound allspice, 1 ounce cloves (not ground, in a muslin bag), $\frac{1}{2}$ pound mustard (mix this with vinegar), 2 pounds brown sugar, 6 onions, 20 small garlic. Boil tomatoes, onions, garlic well, strain through a colander and then through a smaller sieve. Add the other ingredients, boil until thick enough to suit taste.

Q. Have you a good recipe for canned grapes?

A. Take the grapes and pulp. Put the pulp on to boil, strain through a colander and take out the seeds, then boil the pulp and skins with $\frac{1}{4}$ pound of sugar to 1 pound of the fruit for 20 minutes. Add a little apple pulp to thicken and to avoid the acid particles that gather in canned grapes.

Q. Have you a recipe for green tomato pickles?

A. Take one peck of green tomatoes, peel and slice; 3 large onions sliced; sprinkle with a teacup of salt and allow to stand over night. Drain well and scald in weak vinegar 10 or 15 minutes. Drain again and scald with 1 quart of strong vinegar, add $\frac{1}{2}$ pound sugar, 1 tablespoon curry powder, 1 of allspice, 1 of mustard. Then simmer slowly for a few minutes. Bottle and seal.

REPORT
OF THE
FARMERS' INSTITUTES
OF THE
Province of Ontario
1905

Part II. Women's Institutes

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE)

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A Regular Monthly Meeting of Brampton Branch, Peel Institute, at the home of Mrs. J. W. Smith.



Mrs. J. H. McNeilly, Stoney Creek.



Mrs. J. E. Brethour, Burford.



Mrs. S. R. Bows, Milton.



Mrs. Bertha Dahl-Laws, Appleton, Minn.

PRESIDING OFFICERS AND SPEAKER AT THE ANNUAL CONVENTION, GUTHRIE, 1904

REPORT OF

THE WOMEN'S INSTITUTES OF ONTARIO.

1905.

ANNOUNCEMENT OF THE SUPERINTENDENT.

THE PAST YEAR'S WORK.—The time has again arrived to review a year's work among the Women's Institutes of the Province.

In number of meetings held, attendance, membership, organization of District and Branch Institutes, there has been marked advance, as indicated below:

	1904.	1905.
Membership on June 30	5,433	7,018
Attendance	44,698	54,329
Number of meetings held	960	1,426
Number of papers	1,848	2,380
District Institutes	58	69
Branch Institutes	149	208

It will be seen from the above figures that the increase in membership for the first six months of 1905 is 25 per cent. in advance of the previous year. The increase since June is even more marked.

The series of summer Farmers' Institute meetings, held in several of the northern sections, and to which a lady delegate was sent, resulted in the formation of a number of new organizations which give promise of rivalling in enthusiasm and character of work undertaken, the Institutes in the older parts of the Province.

It is not, however, on numbers alone that we must base our estimate of advance. We must ask ourselves if the home-makers of the country have been assisted in meeting the responsibilities which come to them from day to day: have the mothers of the land been directed as to the proper dietary for the younger and older members of the family,—how best to provide the most suitable foods at a minimum of cost and labor for the building and maintenance of bodily strength? Have the husbands and fathers been brought to a better appreciation of the necessity for sanitary conditions in order that the health of the family may be ensured: have the benefits of sunshine and fresh air at all seasons of the year been given due prominence: have the husband and wife been instructed in the desirability and economy of a greater proportion of vegetables in their diet: have the boys and girls of the farm been made to realize that they are partners with their parents in the many interests of the home: have the various members of the household been instilled with the necessity for undertaking some line or lines of reading: have the women in country districts been given an opportunity for social intercourse which they had not previously enjoyed: have the women of the town and country been brought more closely together, each deriving benefit therefrom:

have class distinctions and sectarianism been lessened? If these results have been attained in the work of the Women's Institutes, then we may rest assured that the efforts of the Department have not been in vain.

OFFICERS AND MEMBERS.—The success which has attended the efforts of the Department is due in a large measure to the character of the women who have taken an interest in the work. It is true that "home keeping hearts are happiest," and it is because of the large number of contented home-makers who have assisted in carrying on the work of the Institutes that such gratifying results have followed. We cannot speak too highly of the sacrifice made by the officers and members generally throughout the country in carrying on the work from month to month and inducing their neighbors and friends to join with them. We would impress upon the officers that it is by personal invitation to those not connected with the work that we must look for additions to the membership and workers.

LECTURERS.—It would not be just to the large corps of Institute lecturers to overlook mentioning the excellent work they are doing. For the most part these ladies have not only had practical experience in household duties, but also practical training along some line or lines of domestic science. Individually and collectively they are deeply interested in the work and exhibit a desire throughout the year to get information and experience which will assist them in the following season's work.

RULES AND REGULATIONS.—It was the intention of the Department to revise and reprint rules and regulations governing Women's Institutes, but when an attempt was made to formulate workable regulations, it was found difficult to make such rules as would work to the satisfaction and in the best interests of each locality. It has been thought wise not to decide upon any changes until after the Convention of 1905, at which the proposed changes will be submitted to the delegates and the whole matter thoroughly discussed and conclusions arrived at.

GRANTS.—Many of the Institutes throughout the Province, especially those more recently organized, have found it difficult to carry on the work for lack of funds. In many cases the officers have shown much resourcefulness in devising means to augment their funds. It was thought, however, that a small grant from the Department, \$3.00 to each Branch, would be of great assistance, and the Minister of Agriculture very generously acceded to the request. The district officers have also been given an increased grant based upon the number of separate organizations in the riding, which will enable them to carry on more aggressive work. The beneficial results of the increased grants are already evident.

The Department has been most lenient with those Institutes which have not complied to the letter with the rules and regulations. We have recognized that the work is new to the majority of officers, and have therefore not enforced the rules so strictly as would otherwise have been the case. The time has now arrived, however, when the assistance given by the Department will depend upon the promptness and exactness with which officers make returns to the Department of finances, members, meetings, etc. Books in which to keep records will be furnished to both district and branch secretaries, and unless the rules and regulations accompanying same are strictly complied with, the Department will be compelled to withdraw its support. One of the chief benefits to be derived from organizations of this nature is the training which officers receive in business methods. If complete returns had been received from all Institutes, there is no doubt that the total attendance recorded for the year would have been much larger; also the number of papers read and addresses given.

REPORTS OF LOCAL WOMEN'S INSTITUTES.

For year ending May 31, June, 1965.

Institute District.	Membership Dec. 1964.	Membership to June, 1965.	No. of Meetings held.	Total attendance.	No. of papers read or ad- dresses delivered.	Cash on hand per last Report.	Receipts.				Expenditure.												Total.
							Members' fees.	(Grants.	Receipts from con- ventions and excursions.	Miscellaneous.	Total receipts.	Expenses for meetings.	Secretary's salary and officers' expenses.	Postage and Stationery.	Printing and advertising.	Lecturers' expenses and allowances.	Periodicals for members.	Miscellaneous.	Balance on hand.				
Anherst Island.....	55	55	10	160	13	11 70	13 50	20 00	1 60	.....	46 80	3 50	9 00	81	.....	2 00	6 48	25	21 76	16 80	c.	.....	c.
Brant N.....	105	124	21	854	52	28 40	38 25	25 00	.....	02	91 67	13 70	10 00	3 80	4 75	5 35	5 45	.....	48 62	91 67	c.	.....	c.
Brant S.....	178	174	28	1,240	59	22 24	47 05	35 00	.....	.....	104 29	11 41	10 00	13 55	7 50	9 17	9 15	2 04	41 17	104 29	c.	.....	c.
Bruce C.....	62	40	25	589	43	6 59	12 25	20 00	38 25	17 25	94 34	8 12	35 10	1 99	2 50	7 75	5 45	.....	33 08	94 34	c.	.....	c.
Bruce, N.....	49	12	192	17	17	11 25	10 00	10 00	.....	.....	21 25	60	.....	1 25	.....	4 00	.....	.....	15 40	21 25	c.	.....	c.
Bruce, S.....	88	32	14	1,067	25	28 60	13 00	20 00	.....	.....	61 60	9 65	10 00	92	2 91	.....	.....	.....	38 12	61 60	c.	.....	c.
Bruce, W.....	88	100	24	774	39	22 09	25 00	30 00	.....	.....	77 09	13 25	10 00	1 25	1 50	.....	10 90	20	39 99	77 09	c.	.....	c.
Dufferin.....	111	143	33	1,333	56	42 21	24 25	10 00	34 00	50	110 96	13 75	15 00	4 19	2 50	9 00	27 40	7 70	31 12	110 96	c.	.....	c.
Dundas.....	18	10	158	14	14	5 00	10 00	10 00	.....	.....	15 00	4 40	.....	.....	3 60	.....	.....	.....	6 09	15 00	c.	.....	c.
Durham, E.....	120	163	7	186	10	7 00	38 50	40 00	.....	.....	85 50	.....	.....	4 55	3 30	18 53	.....	27 80	31 62	85 50	c.	.....	c.
Durham, W.....	53	56	24	297	24	56 76	11 00	45 00	.....	.....	112 76	14 05	10 00	4 91	8 50	13 50	25 34	1 72	34 74	112 76	c.	.....	c.
Elgin, E.....	107	95	28	1,286	61	18 50	28 75	45 00	47 49	.....	139 74	10 00	25 45	5 05	5 25	18 10	50	17 32	58 07	139 74	c.	.....	c.
Elgin, W.....	32	4	343	7	7	8 75	.....	.....	.....	.....	8 75	.....	.....	1 48	1 00	4 25	.....	90	1 12	8 75	c.	.....	c.
Essex, N.....	79	9	9	554	13	13 25	6 75	.....	.....	.....	20 00	1 50	5 00	1 25	3 50	.....	.....	.....	8 75	20 00	c.	.....	c.
Grey, C.....	176	195	53	632	54	21 05	45 50	20 00	.....	62 92	149 67	1 66	13 50	9 07	2 75	1 90	14 15	33 59	73 05	149 67	c.	.....	c.
Grey, N.....	200	148	62	835	21	56 89	36 75	20 00	.....	90	114 54	6 25	20 00	8 58	5 50	44 00	1 90	60	27 71	114 54	c.	.....	c.
Grey, S.....	88	64	28	752	75	24 12	23 50	20 00	1 10	.....	68 72	13 09	15 00	3 76	1 00	9 05	5 30	3 94	17 58	68 72	c.	.....	c.
Haldimand.....	115	202	52	1,988	62	14 83	54 90	40 00	.....	.....	209 73	14 28	10 00	4 07	2 50	1 50	10 90	17 38	49 10	109 73	c.	.....	c.
Halton.....	535	545	72	3,523	161	60 73	133 00	35 00	14 09	27 00	269 82	3 50	20 00	10 68	18 28	33 85	52 30	11 29	116 92	269 82	c.	.....	c.
Hastings, E.....	209	254	11	1,190	31	22 01	50 50	65 00	.....	38 73	176 24	5 30	25 00	5 05	3 00	12 00	.....	47 20	78 69	176 24	c.	.....	c.
Hastings, N.....	62	266	17	650	23	27 37	13 50	55 00	.....	5 90	101 77	14 00	20 00	2 44	2 60	20 85	7 20	.....	44 68	101 77	c.	.....	c.
Hastings, W.....	60	92	8	310	23	22 00	22 35	20 00	.....	90	65 25	2 98	22 50	4 67	4 00	7 00	.....	.....	24 10	65 25	c.	.....	c.
Huron, E.....	176	137	57	1,266	63	18 89	30 75	20 00	13 90	.....	83 54	38 19	20 00	4 88	2 75	5 00	5 25	89	6 58	83 54	c.	.....	c.
Huron, S.....	69	73	12	325	21	6 35	19 00	45 00	7 80	15 25	93 40	3 00	18 50	2 55	10 85	.....	10 48	21 37	26 05	93 40	c.	.....	c.
Huron, W.....	109	129	25	1,100	60	12 53	32 85	20 00	20 20	3 30	88 88	46 92	10 00	1 49	8 81	.....	.....	.....	21 66	88 88	c.	.....	c.
Kent, E.....	22	22	3	100	8	4 50	.....	.....	.....	.....	4 50	.....	.....	1 05	1 50	.....	.....	.....	1 95	4 50	c.	.....	c.
Kent, W.....	88	72	19	1,079	42	33 98	22 00	35 76	.....	7 35	99 09	14 96	10 00	4 93	8 45	12 95	1 50	8 60	37 70	99 09	c.	.....	c.
Lambton, E.....	17	17	4	113	6	7	7 75	.....	.....	.....	7 75	.....	.....	55	1 00	1 00	.....	.....	5 20	7 75	c.	.....	c.

	23	4	114	6	5 75	25	6 00	1 62	2 00	1 24	1 00	2 00	12 00	5 56	14	6 00
Lambton, W.	20	15	194	26	11	13 50	23 61	8 00	2 00	1 13	1 00	2 00	12 00	5 56	14	6 00
Lemnox	89	16	845	31	22 68	17 25	55 93	8 00	10 00	4 10	5 50	11 25	9 45	8 63	23 61	
Lincoln	160	201	1,724	100	18 29	45 00	9 78 143 07	4 50	10 00	6 93	3 10	16 48	13 95	17 95	70 16 143 07	
Middlesex, N.	64	28	11	186	18	5 12	1 80	5 90	2 00	1 18	2 75	6 25	1 85	3 00	25 99	46 92
Middlesex, W.	77	72	5	169	9	20 72	47 22	3 25	10 00	1 75	1 50	2 10	20 60	8 02	47 22	
Monck	58	38	11	212	16	18 94	1 00	8 20	10 00	3 25	05	2 25	1 10	6 63	16 21 37 69	
Muskoka, S.	55	35	7	190	9	15 04	2 93	2 70	10 00	1 14	50	3 89	4 73	23 26	46 22	
Norfolk	108	131	31	1,222	38	34 80	108 55	1 20	15 00	5 38	6 70	6 00	12 27	62 00	108 55	
Northumberland, E.	78	95	21	556	26	31 90	89 40	37 83	10 00	4 12	2 60	16 45	20 18	20 89	40	
Northumberland, W.	62	18	6	72	3	27 25	65 85	4 55	12 50	5 75	14 20	7 50	21 35	65 85		
Ontario, S.	35	61	8	234	14	22 79	65 59 44	2 50	10 00	1 35	4 50	24 55	16 51	59 44		
Ontario, N.	36	7	128	7	12 25	2 98	15 23	2 61	10 00	53	3 75	4 95	15 23	4 95	15 23	
Oxford, S.	243	150	18	1,549	55	40 80	5 03 134 33	21 61	10 00	17 11	6 00	4 38	3 90	5 68	65 65	134 33
Oxford, N.	201	304	30	3,269	104	53 87	26 12 139 74	41 91	38 30	9 86	10 50	28 65	1 67	28 85	139 74	
Perth, S.	62	50	10	250	25	31 18	42 66 36	14 40	10 00	2 39	8 45	9 50	25 90	22 83	66 36	
Perth, N.	66	10	14	482	22	5 56	23 89 68 65	17 45	10 00	1 22	1 25	5 00	54 55	35 22	117 32	
Peterborough, E.	50	52	16	265	12	26 81	6 21 117 32	13 71	10 00	1 81	4 83	4 20	5 00	3 29	5 73	44 47
Peterborough, W.	60	82	13	449	19	5 82	44 47	15 00	10 00	2 70	2 75	13 20	1 55	7 20	33 45	
Renfrew, N.	54	32	11	105	10	4 25	7 20 33 45	7 50	15 71	1 50	5 60	4 50	16 61	20 27	60 20	
Simcoe, C.	98	50	4	419	6	17 33	51 08	9 00	10 00	3 25	7 60	29 10	8 40	31 25	125 82	
Simcoe, S.	54	65	18	970	40	21 41	6 04 60 20	30 20	20 00	6 87	3 00	6 00	6 00	9 01	63 00	
Simcoe, W.	159	194	57	1,604	57	37 37	5 50 125 82	90 63	00	3 49	3 00	3 75	4 40	12 78	39 51	
Union	59	59	11	378	15	12 35	39 51	8 07	8 80	1 71	3 75	5 00	2 48	17 28	43 05	
Victoria, E.	74	65	23	780	49	2 51	3 30	3 15	10 00	5 14	3 00	6 69	9 90	37 34	96 45	
Wellington, E.	110	52	29	497	37	9 25	8 30 43 05	15 55	10 00	6 52	4 25	6 00	11 10	8 50	32 66	71 98
Wellington, S.	122	11	1,128	22	24 50	10 00	11 64 103 51	21 73	20 00	4 58	25 30	20 60	5 15	5 50	34 67	73 50
Wellington, W.	30	72	32	431	63	28 10	73 50	9 50	18 10	3 68	2 60	11 95	5 15	4 33	13 33	34 50
Wellington, N.	171	185	23	1,317	43	28 21	108 28	15 13	2 00	6 73	5 50	5 10	16 65	1 00	55 15	108 28
Wentworth, N.	104	67	6	465	14	18 15	131 74	16 10	12 00	6 73	3 50	3 35	9 05	79 01	131 74	
Wentworth, S.	240	176	39	2,997	91	23 33	6 00 105 05	11 90	13 00	3 92	3 75	2 50	24 25	31 55	14 78 105 05	
York, E.	109	143	25	1,098	34	28 30	26 60 143 23	19 80	5 00	27 08	7 07	7 40	4 00	28 17	41 71 143 23	
York, W.	131	108	27	880	45	25 93	14 75 122 50	11 42	21 60	1 10	20 21	19 10	13 50	25 37	122 50	
York, W.	131	108	27	880	45	25 93	94 68	10 00	10 00	1 93	7 51	30 10	35	26 27	5 49	94 68

*Not in Institutes
or in June, 1905.*

Algonia, C.

Algonia, E.

Manitowlin, E.

Parry Sound, E.

Total 6254 7018 1426 54329 2380

OFFICIAL ORGAN.—The Department was most fortunate in securing a Canadian household magazine as official organ, at the beginning of 1905. The publishers agreed to reduce the price to Institute members, and to allow the Women's Institutes from three to five pages each month, in which to publish Institute news, and papers read at the monthly meetings. This organ has been of great benefit to the various Institutes in assisting them to arrange monthly programmes. A series of lessons for twelve months beginning with December, has been arranged for, and will enable the Institutes to plan their work for the coming season.

ANNUAL CONVENTION.—Attention is hereby drawn to the proceedings of the Convention of December, 1904, which appear in this volume, also to the papers read before Institutes in different parts of the Province, and others prepared by Institute lecturers.

GEO. A. PUTNAM,
Superintendent.

TORONTO, NOVEMBER 1st, 1905.

Women's Institutes of Ontario.

ANNUAL CONVENTION.

The third annual convention of the Ontario Women's Institutes is deserving of special mention, not only from the fact that it was representative of a larger district and more enthusiastic than its predecessors, but in that a portion of the second day was devoted to a joint session of the students and officers of the Macdonald Institute and the citizens of Guelph, for the formal opening of the said Institute. Many were the expressions of regret that the donor, Sir Wm. Macdonald, who has done and is doing so much for the educational interests of the Dominion, could not be present. In the person of Prof. J. W. Robertson, he had a worthy representative, and the Assembly Hall was full to overflowing to listen to the addresses of Mrs. John Hoodless, Dr. Robertson, Dr. Mills, and President Creelman. It was very gratifying to those who had so much to do with carrying out the details in the erection and equipment of the institution, that the citizens of Guelph and representatives from the Women's Institutes throughout the Province should attend in such large numbers and show such an interest in the addresses given.

The delegates very much appreciated the innovation of having representatives from among themselves* preside at the different sessions. In Mrs. J. H. McNeilly, of Stoney Creek (the first formed Institute); Mrs. S. R. Bews, of Milton, (the banner Institute for the year); and Mrs. J. E. Brethour, of Burford, (one of the most enthusiastic local workers), we had representatives who did credit to their Institutes and to the work generally. The opening addresses of these three ladies are specially valuable in that they are the sincere utterances of women who have done the field work and who speak from experience. The strongest comment to be made upon these addresses is to recommend that they be read very carefully, especially by Institute officers.

The delegates were delighted with the reception accorded them by their former Superintendent, President Creelman, who welcomed the ladies most cordially, and took the opportunity of stating that the magnificent buildings which had been erected were to be for "your children, and you should take upon yourselves to be the sponsors for them. By that I mean that so long as we have room in the Macdonald Hall we shall admit all good girls to the Institute." He stated that it was the determination of those in charge to make the course practical, and appealed to the mothers to send their bright girls.

Professor Robertson paid a high tribute to the work which had been accomplished by the Institutes, stating that in his opinion they stand out pre-eminently among the agencies in the Province for the uplifting of the rural population. He believed the Women's Institutes would do equally as good work among the women as the Farmers' Institutes had done among the men.

The excellent staff of the Macdonald Institute, under the able leadership of Miss Watson, very kindly gave the delegates clear and concise statements of the work taken up in the different courses. These descriptions of

work in the different departments are worthy of the careful study of the mothers who are mapping out courses of study for their daughters.

The pleasing and instructive manner in which Mrs. Bertha Dahl Laws combined practical experience and the results of scientific investigations, was a delight to all who were fortunate enough to hear her either at the joint evening session of the Ontario Agricultural and Experimental Union and Women's Institutes, or at the sessions which followed. Mrs. Laws' address on "Plain Food and Plain Living," and also that given at the Monday evening meeting on "The Girl and the Home," will be found very interesting reading by all Institute members and workers.

The convention was doubly honored in having addresses from both the Minister and Deputy Minister of Agriculture. The presence of these gentlemen and their words of praise and encouragement created more enthusiasm than was shown at any other session, and did much to encourage the workers to return to their respective homes with a determination to put more earnestness into the work and to solicit the co-operation of the mothers and daughters within the confines of the Institute.

The words of Mrs. John Hoodless were listened to very attentively, and did much to impress the delegates with the importance of the work they had already done, and inspire them with the confidence which is necessary in order that greater results may follow. "You have in this organization," said Mrs. Hoodless, "a tremendous power for good, and that it may be used to its fullest extent is my most earnest wish for you."

The readiness with which the officers and lecturers entered into the discussions of the topics submitted by the Superintendent resulted in many suggestions and decisions of value to the officers in carrying on the work in their respective localities.

A complete report of the convention follows.

OPENING ADDRESS.

BY MRS. S. R. BEWS, MILTON.

I am very proud indeed to see before me so many representatives from the best homes of our Province. Our best homes? Yes, for are not our best homes made by our most progressive women? I expect every woman before me is a home-maker and a member of this wonderful organization that a few years ago had not been heard of, but which during the past three or four years has done so much for the women of Ontario.

In a very suggestive little poem Ella Wheeler Wilcox tells us that wherever we go we will find just two classes of people—those who lift and those who lean. There is no doubt as to which class we belong. We have chosen the right side, and have already done much to lift up. We want more lifters and fewer leaners.

Our Women's Institute has been accepted with so much enthusiasm and earnestness that it has already reached large proportions. We have now (Dec. 1904) 57 Institutes, with a membership of 5,433, and the attendance at our meetings last year was nearly 45,000; more than double that of the year before. Now, who can estimate the influence of these meetings, where our ladies have become so unselfish that they are willing to give their best recipes, etc., to others? (Laughter).

Life is rich in what it gives and not what it gets. We have learned the nobility of work and the old cry of drudgery is beating a retreat, and our work is becoming a profession. The women who testify most to the helpfulness of the meetings are our members themselves. We have dozens of ladies in our Institute who would not miss a meeting. They make more effort to be present at an Institute meeting than at any other, because it deals with such practical subjects. The time is coming when if a woman is to rule wisely and well in her own home she must not shut herself up in her own kingdom. The life of the women in India, China, Japan, etc., is too narrow; too one-sided. We need a broader life, and it is absolutely necessary that we come in contact with the great outside world. It is true a woman can grow wise with her own experience, but she can grow wiser by making use of the experience of others.

It is a great pleasure to meet this morning with such a number of ladies who recognize the fact that there is something to learn. We can go to Institute meetings where there is something to learn, and that is one of the greatest benefits of our Institute. I would like to repeat what Miss Rose said to you last year: "Get all the knowledge you can while you are here, and then go home taking with you all the good ideas and thoughts you can to the other members of your Institute." If our meetings are to be the valuable helps they were last year we shall go home rich indeed.

Our Institute has been of an educational value. How many of us knew much about bacteria until we had Miss Maddock at our meetings? When I heard Miss Maddock talk about these little germs that give us so much trouble, I wondered that any of us were alive. But we have learned a good deal, and now if we have typhoid fever or scarlet fever, we do not say "This is the Lord's will," but we look into our drains, sinks, cellars and backyards, where we know there are conditions which are favorable to the development of those germs. We have learned that the best way to get rid of them is to let the sunshine stream in. I remember very well when I would not put the blinds up for fear of fading the carpets and furniture, but I have learned better. I have learned that sunshine means health.

Then we have received so many valuable suggestions in little things that help to lessen our work. At one of our recent meetings we were discussing the sprinkling of clothes, and one lady suggested that we should sprinkle them with a whisk, thus making the dampening of the clothes much more even. At another meeting we had a discussion on the cleaning of lamps, and one lady brought a burner she had used for seventeen years, which almost put to shame a new burner. Her method was as follows:

"Preparation for cleaning lamp burners. Take to your druggist an 8-ounce bottle. Buy five cents' worth powdered chalk and two cents' worth of ammonia. Then fill the bottle with soft water. Rub up your burners about once a week with this preparation, using a flannel cloth, and it will keep your burners bright. There is too much ammonia in this to use it for cleaning silver."

Thus, in these little ways we are lessening our work. It is true they may be little simple things but they make up our life.

Then we did not know how to put an arm in a sling until Miss Millar came and told us, and now all through our county women are putting into practice the helpful suggestions they have received at Institute meetings. We learn that we do not know everything and that there are others who know something as well as we.

Then there is a higher side in our work. We learn the value of appreciation and consideration and sympathy. I maintain that the best in every

boy and girl is brought out by sympathy and encouragement, and I think if we who are grown up will be honest we will admit that we like it too. A writer has put it in these words:

Amid the cares of married life
In spite of toil and business strife,
If you value your sweet wife—
Tell her so.

If days are dark and deeply blue,
She has her troubles, same as you.
Show her that your heart is true—
Tell her so.

There was a time you thought it bliss
To have the favor of one kiss.
A dozen now won't come amiss—
Tell her so.

She'll return for each caress
A hundred fold of tenderness.
Such hearts as hers were made to bless—
Tell her so.

Never let your love grow cold,
Greater beauties will unfold;
She is worth her weight in gold—
Tell her so.

And is it not so? A good woman is the greatest inspiration we have. The education of our women and the improvement of our home is a real factor in the building of a great nation.

ADDRESS OF WELCOME.

By G. C. CREELMAN, PRESIDENT AGRICULTURAL COLLEGE, GUELPH.

I am glad to be with you this morning and to bid you welcome to the Ontario Agricultural College. For years we have been welcoming here the farmers and the farmers' sons from different parts of the Province of Ontario. For a time they came by themselves, but later on began to bring their wives and their daughters. But now the latter have thrown off—what shall I say?—the shackles that bound them to the farm 365 days in the year. We have before us to-day the most magnificent and the most important audience, in my opinion, that ever came on the grounds of the Ontario Agricultural College. I do not say this to flatter the ladies, but I have felt ever since I graduated from this institution, and I have felt it since I have been at the head of the institution, that while we had met with success in bringing about improved conditions of agriculture, there was a want in the farm home that was not being touched. And when I was Superintendent of Farmers' Institutes I felt there was something lacking. The delegates came home from their trips through the country and told me of the improvements in silos, in cattle, in farm buildings, in machinery and implements, but there was no one to tell me that the farm home was better ventilated and the homestead better kept. And so I thought, "Young man, here is an opportunity for you to do something along this line. If you do not undertake it you will not be doing your duty to the State." It was with this thought in mind that I wrote that letter to you so long ago. I did not think

at that time it would have developed to the point where over 200 delegates would send in their names and ask for badges, and express their intention of attending a meeting such as we are holding to-day. But having reached that splendid condition, it gives me great pleasure to welcome you this morning.

Through the munificence of Sir William Macdonald, and through the splendid agency of Prof. Robertson, we have erected for you and for your daughters two of the most beautiful buildings that can be found for such a purpose: the Macdonald Institute, in which you are now seated, and the Macdonald Hall, the residence for the students.

I do not wish to break into the speeches of any of those who are announced to address you, but while I have the opportunity I would like to make a little explanation. I would like to say that these buildings are to be your own children's, and you ought to take upon yourselves to be the sponsors for them. By that I mean so long as we have room in the Macdonald Hall we are going to admit all good girls to the Institute. But in consultation with Prof. Robertson and Dr. Mills, we have come to the conclusion that these buildings must be populated with girls who come from rural sections. In that sense I would like your co-operation, your sympathy and your girls, and we want to make it possible that every girl connected with this institution will not only be a better home-maker and all that that word implies, but will also come in touch with the soil itself. The very best housekeeper who knows nothing of the soil and of farming conditions, is not the best helpmeet for the man on the farm. In every course at the Macdonald Institute we want something of the agricultural touch; a little of fruit growing, a little of poultry raising, a little of dairying, etc., so that every girl will receive a knowledge of better methods—the nature touch—that will not only cause her the rest of her life to be interested in the farm, but also to feel that this is a part of her duty and a part of her privilege to keep in touch with the farm upon which she lives.

We are trying to make the course at the Macdonald Institute practical, and it rests with you whether we can. That is, we want you to send us your bright girls, and we shall make our course as nearly as possible harmonize with your demands, and make this Institute the very best of its kind to be found upon the continent of America.

I welcome you here with a very full heart, because I feel in a sense you are children of my own, and I feel that this is a sort of family gathering this morning. I see many here who worked with me in the early days, and who have done so much to make the Institute the success that it is to-day. I want you to make yourselves as much at home as if you were holding an Institute meeting back somewhere on the side road.

ADDRESS.

By PROF. JAMES W. ROBERTSON, COMMISSIONER OF DAIRYING, OTTAWA.

I am glad you appreciate what President Creelman was able to do for you in organizing Women's Institutes. I think of all the agencies in this Province that are for the uplifting of the rural population the Farmers' Institute has stood out pre-eminent in its service of the people. It has been a place where farmers have helped each other; where farmers have learned from each other; and from which they have gone home not merely to do better work, but to work with a larger conception of the real dignity of work on the farm.

It is my belief that the Women's Institute will do equally good work for the women of the Province. I am glad to know this is the record of the Institute until this time. I have watched the work of the Institutes, and am quite sure that they have still greater powers of service than have yet been revealed.

I liked that note of your chairman's subject this morning when she spoke of the value of praise and discriminating encouragement. I think that agent does much for young people and for the old people as well. One of my American friends said to me once, "If you want to make a woman think a lot of you, fill her full of love for herself, and what runs over is yours."

Every idea has a value. I hope you will cherish that thought during all your meetings and during all your days. Ideas are the things most worth watching for in life, and especially ideas based on knowledge. Now, no one woman can gather as much knowledge of home-making as twenty women can, and no one woman can sift out the best as twenty women can; so in meeting together you get not only ideas but ideas sifted down and rated at their proper value.

Then there are ideas based on beliefs, but it is a good thing to have these beliefs of the right sort. I know people who have their beliefs based on errors. Down in Quebec a woman went to the priest and told him she had a great sin to confess. She said, "Father, when I look in the glass, I find I am very beautiful and I fear I am getting vain." The priest replied, "Well, that is not a sin, it's just an error, and in your case a very pardonable one." (Laughter).

Just a word as to ideas based on hopes; not merely that you know certain things and believe certain things, but that you hope for better things both here and hereafter, and there are ideas based on these things to lift the feet, the heart and the hands out of drudgery.

Then we have ideas on our ideals. The only way in which an intelligent man can fill his place is to have his ideas based on ideals, so that the men who live five hundred years hence may be better men than if he had not lived to-day. So I believe these Institutes are of great value because they send you home richer in ideals—ideals based on the things I have hinted at.

I am glad to see such a splendid gathering in this good building, and wish you every success in all your work and undertakings.

ADDRESS.

BY SUPERINTENDENT PUTNAM, TORONTO.

I shall make a few remarks only at this time, and as the convention progresses shall take occasion to speak on the various matters which come before you.

It is with much delight this morning that I meet with the representatives of Women's Institutes from over the Province, for the first time. I quite agree with the hint thrown out by the presiding officer, that men are coming to realize what the Women's Institutes mean; and to be frank with you, must admit that when I first took charge of the work, was inclined to put credence in the statements of some that I would not have to guide the Women's Institutes for long, as they were sure to disband in a short time. I thought very much as the lady who suggested that the only organization now required was one to prevent the organization of further organizations. I am glad to have been agreeably surprised in this matter. The work has been steadily going forward instead of backward. I feel the responsibility of my position very much, and if it were not that I feel sure of the advice and assistance of such men as Dr. Mills, President Creelman and Prof. Robertson, I would not care to assume the responsibility of guiding what has grown to be one of the greatest influences in the betterment of home conditions.

My work, as you know, must consist in getting good speakers from whatever source I can, to instruct and assist the ladies throughout the Province; not to address many of the meetings myself, but to send the very best help I can procure. As an evidence of my first effort in this line, you will agree with me that the fine address we listened to last night is the strongest evidence that my judgment was sound in selecting Mrs. Laws for our convention. Mrs. Laws is the first speaker I had the pleasure of selecting from outside, and I am sure the ladies heartily approve of the choice.

I shall aim to get the very best speakers, and to provide them with facilities for getting information from the very best source, before sending them among you. We shall depend upon the ladies throughout the Province to let us know what they want, and my province is to supply them with what they want and with what they need. It is true that we have in the Macdonald Institute an excellent institution for the training of young ladies from rural districts. But even if this institution were five times the size it is, and if its capacity were ten times as great, a large number of our people would not be directly influenced by the institution. The majority of ladies in this banner Province will not have an opportunity of visiting the Macdonald Institute, so it remains for the Women's Institute lecturers to take the knowledge which these ladies are anxious for to their very doors.

Again may I express my great pleasure in welcoming the Women's Institute delegates from over the greater portion of the Province of Ontario, and I sincerely trust that the addresses and discussions may be of much benefit to each of you, and through you to all the members of our organization.

THE WORK OF THE MACDONALD INSTITUTE.

By Miss M. U. WATSON, GUELPH.

We have in the Macdonald Institute, as most of you have seen by our announcements, three departments, namely, the Nature Study Department, the Manual Training Department, and the Home Economics Department. As you are interested chiefly in one branch of the Home Economics Department, I will speak of that for a few minutes this morning.

In the Home Economics Department we have two sorts of work: the Normal, and the Housekeeper work. The English call the latter "Housewifery," and I like the term, but it is not common in this country. Better still is "Home-makers' work," and this is the name we want to make descriptive of the work.

We shall dismiss the Normal work with the explanation that it prepares people for teaching this subject in our Public Schools.

We have two regular and a great many irregular courses of Home-makers' work. One regular course occupies one year, and the other three months. The irregular courses—as their names imply—occupy different lengths of time. The students in them choose their work from among our regular courses and stay as long as they feel disposed. In the two regular courses we have now two full classes and for the next short course, which begins in January, we have already 33 applications. I asked President Creelman the other day whether all further applications should be refused, but he said, "No, have a second class by all means. We can arrange for more teachers if necessary." I hope you will send us more applications, so that we may open a second short course class after Christmas. Miss Holland will presently describe to you the work of the short course.

The long course takes up very much the same work as the short course, but as it covers more time we are enabled to take up the work more fully. I was going to say that the long course is better than the short course, but it is better only in so far as the girls are able to give more time to each subject. The short course is just as good for the length of time it covers. We would rather see more girls take the long course, but there are many who cannot do this, and the girls who have taken the short course tell us they have gotten a great deal out of it. This one year housekeeper course is very practical. We take up cookery from the beginning, teach only its plainer forms, and make no attempt whatever to do fancy cooking. We believe that if we teach our students how to cook meats, vegetables, eggs and milk, and to mix and cook the plain combinations of foods, it is only a matter of time and experience on their part when they can make anything they wish, so we take them through a good foundation course. Then we take up sewing. If we find they have done little or no sewing—and it is surprising how many girls reach the age of seventeen without being able to use a thimble—they are put into a plain sewing class, and have to study sewing as a little child would study it. If we find they sew fairly well, we allow them to enter our garment class, or the shirt waist making class. If they have already covered this ground pretty well, we allow them to go into the dressmaking class, which is the climax of work along that line for the one-year student.

We teach some laundry work. Our laundry is well equipped, indeed, one criticism of it is that it is too fine, that the ordinary household cannot have such a laundry. That is very true, but we aim to make our laundry course so good that when our girls go out from it they will be able to adapt

their work to the conditions which they have in their own homes. We aim to make it independent of our equipment, so that anybody with two tubs, a washboard and a wringer can do good laundry work. We expect all our regular students to do housework. We have had too many students this year, and too few teachers to organize this well, but things are getting into running order now, and we hope to be in even better shape after Christmas. Each student will have to sweep, dust, clean wood-work, clean paint and glass—in fact, carry out just as many cleaning operations as we can find in this building for her to do. Probably in the course of time most of the work in this building will be done by the students. We have not required them to do any floor scrubbing yet, but we may. We want to teach the girls to look well after the corners, believing that if they keep the corners clean the middle of the room will take care of itself, so a teacher goes round to inspect all this work, and if it is not satisfactory the student must do it over again. This is an important branch of our work. In addition to this we want our one-year girls to carry on a good many discussions on household management. They get their practical lessons in their classes by the hour or the half hour, but we want them to discuss the best ways of planning the ordinary home so that the work will be carried out well, and with the least expenditure of labor and time, because we find that our students—and probably many women throughout the country—do not make the most of their steps and minutes, and thus waste much time in doing the work of the home. So we want our girls to observe, and then discuss all these matters. We test the ability of the one-year girls in this direction, by giving them charge of a small apartment and asking each of them to keep house for a week. The girls have to do the marketing; see that the food gets here in time (which is sometimes difficult); see that it is served in time; see that the dishes are washed and the whole place kept in order. They have to be prepared for guests on short notice; and finally, at the end of the week, to render a correct account of the money received and expended, and have their books audited.

Finally, we want our girls to discuss some of the greater problems of the home. Our work will not reach its climax until it leads our girls to think about the family. To think about the rights, and duties, and joys of each member of it, and of the relation of the family as a whole to the community.

We ask your help in a matter which is very near our hearts, namely, the giving of a good course to farmers' daughters. You are representatives of the Women's Institute throughout the country, you come in much closer contact with farmers' daughters than we do, and are thus in a position to help us in our work. I do not mind telling you that this is the course I am most interested in, and which I am anxious to make the greatest success in this institution. We would like you to take up at one of your Institute meetings the subject of "A good course of training for the farmer's daughter." Take it up when you have had time to think about it, devote a meeting to it, then send us the result of your discussions. We want to get out our new announcement early in the spring, and shall be thankful for all the help you can give us in making this course the most perfect that can be offered. I can assure you on Mr. Creelman's behalf that your suggestions will receive every consideration and we will make use of them.

Have we an age limit? Only at one end, and that is the earlier end. We do not admit students until they are seventeen, but we take them at any age after that. We have students of all ages, and it is difficult to say which are the better ones. I am not prepared to say because I like them all.

MACDONALD INSTITUTE SEWING.

BY MISS GRACE ROBERTS, GUELPH.

Scientists tell us that when the right hand is used the left side of the brain is developed, and when the left hand is used the right side is developed. Now that Manual Training has been introduced into the schools we may hope to have a less one-sided development than we have had in the past. We claim that sewing comes under the head of manual training. If you were with us during one week of our work you would see how much of the body is brought into play—not only the mind but the body. We shall consider for a few minutes the educational value of sewing.

Interest. You know girls are always interested in what they wear, so we do not have to work very hard to stimulate interest.

Creative activity. We try to help the girls to create; to think for themselves; not to be satisfied with being mere imitators, but creators. Sewing affords a great opportunity for creative work, especially when the art side accompanies it. At present we have not the time nor the facilities for the art department, but expect to, when we have the additional assistance, of which Miss Watson has spoken.

Sewing develops co-operation between the eye, the brain, and the hand. (Oh! it is pitiful, the lack of co-operation there is in this respect). Girls know what things should look like, and what they want, but they cannot make them. They have not an accurate enough eye to cut things straight, nor yet to stitch straight, two essentials in sewing. That is a strong educational plea for sewing in our schools—accuracy at every point. We find we need it at every step of the course, if satisfactory results are to be obtained.

We also learn the value of simplicity. We try to think of clothing in relation to the individual, good proportion and personal adaptation in dress. You will agree with me from your observation on the streets, that the general public needs education in this matter. We are not all beautiful but we can show adaptation in dress, and thus improve our appearance. One day I saw a tall angular girl, wearing everything to accentuate her angularity. The next day I saw a short, comfortable-looking lady, wearing a garment with the stripes going around, a flat hat with a turban effect, a large rosette at the back of her collar, etc.; everything in fact that tended to make her look short and round! I could not help wishing that I might have those two people with me long enough to make them see things in their true relation.

Now that I have spoken of the educational side of our work, I shall speak briefly of the ground we cover, namely, plain sewing, shirt-waists, skirts, dress-making and millinery. The observer is very apt to think too much of the utilitarian side of this work; the art side is equally important. Material is very cheap, and if we put our own artistic thought into it we get good results with very little financial expenditure.

The plain sewing course, of which Miss Holland has charge, deals with the simple stitches and their practical application. That is a very practical course, and the time is coming when we shall not accept students in the advanced work until they have had this preliminary preparation. They have then a stronger foundation for all future work. You all know that the foundation and the corner stone must be strong or the whole structure is weak.

If the work is satisfactory in the early grades the students are promoted to the machine sewing class, where underwear is made. They buy their own patterns and learn to cut, fit, and make their own underclothing. After the underwear is made, the students take up the making of shirt waists, using bought patterns. There is given in this work an opportunity for the student to think of the waist and its trimming in relation to herself.

The dressmaking department is more advanced. The student has to be eligible for this class by having taken the preceding courses in plain sewing and underwear, or their equivalent before coming to the school. She begins at the beginning to take measurements. (I forgot to say that one of the greatest educational features this work affords is the development of patience!) The girls draft, cut and fit their skirts, and learn the different kinds of skirts. They learn how to cut a skirt from the pattern they have drafted, and also how to deviate according to prevailing style, so that one can be made as well in five years' time as to-day. They first learn the plain underlying principles, without any trimming, then lead up to the more elaborate skirts. Then the students go on and take the measurements for waists, plan, draft, cut, fit and make. There you see again is an opportunity for the exercising of taste in relation to themselves.

Millinery affords excellent opportunities for many lines of work. It teaches the students to make use of old things and to make them look like new. (I would like to call your attention to one of the show cases we have downstairs, which shows renovated materials—flowers, velvets, silks, etc., and all the work of the first grade). Next we take up the simple folds, facings and bow making. The students then trim hats in practice material, which are criticised by the entire class. Buckram shapes are then drafted and made. Canton flannel has the elements of silk, and we use it for covering these hats, but cut it as carefully as though it were expensive material. At present the students are very anxious to get their hats of good material, which they are making for themselves, completed before going home for Christmas. Each season brings a different line of work, spring, summer, autumn and winter. Some people have thought we were going to put the milliners out of business! But we do not worry over that criticism, we are not making milliners, we are helping girls to help themselves in their own homes, just as Miss Watson is helping them in her department to make good housewives. Our work is not professional; we try to teach the girls what it means to have their bodies well clothed, and to learn how to do it with a small expenditure. I think I have made plain to you the value of this work educationally, scientifically and practically.

Some one has asked me to explain a little further what the art department means. I may say that this work deals with color, composition and line, of clothing in relation to the individual, and the study of color from its source. We work from Nature at every point, and learn to create original designs. The work as it now stands is merely technical, but as the school progresses we hope to greatly enlarge the art department.

THE SHORT COURSE IN DOMESTIC SCIENCE.

BY MISS HELEN HOLLAND, MACDONALD INSTITUTE, GUELPH.

The short course in Domestic Science is designed especially for those who do not wish to spend more than one term at the Institute. It does not aim to cover the ground of the longer courses, but provides training chiefly in practical work, but is thorough as far as it goes. This is not a professional course, but aims to help girls to go about their work intelligently in their own homes.

Probably the most important branch is the *cooking*. We begin at first very simply indeed, because we find that some of the girls who come know very little about cooking, and even find it difficult to handle a spoon and an egg beater properly. Then we go on with the study of foods in detail, though naturally, only in an elementary way. We give eight lessons on the flour mixtures, of which three or four are devoted to bread alone. Then perhaps six or eight lessons on meat, pointing out the reasons why different pieces should be cooked in different ways. Besides these important branches, there are lessons on puddings, pastry, desserts, salads, etc. In all these subjects economy is emphasized.

The *plain sewing* is almost compulsory, unless the new student can really sew well. If she gives up the plain sewing class she is allowed no option in its place, so most of the students take it, for it gives a splendid training in neatness, and a sound basis for work in the garment class.

In the *laundry* the work is systematic and thorough. In addition to the sorting of the clothes, and the washing of them, there is the doing up of shirtwaists, and men's shirts and collars. I may tell you that some of the girls have turned out very creditable shirts and collars this term. Great attention is paid to the removal of stains, and anything stained has the stain removed before it is washed. The girls have (in their cupboard) all the things necessary for such work.

Once a week a lecture is given on *Foods*. They have the classification of foods, and their uses to the body, and the study of a few typical foods, in detail. This course cannot cover a great deal of ground, since a knowledge of chemistry and physiology are almost essential, but will at least show a girl that all foods cannot be treated alike.

Once a week they have a lecture on *Sanitation and Hygiene*, among the topics discussed being ventilation, drainage, heating, plumbing and household pests.

As Dr. Ross and her class will give a practical demonstration of their work in Home Nursing, to-morrow afternoon, I need say nothing further on that subject.

The students have a lecture once a week on *the Care of the House*, followed by practical work. If a girl is in doubt as to what she should do she can refer to her teacher, or to her note book. In the care of the house they take up the different methods of removing dirt; the cleaning of wood-work; the removal of stains; the care of glass, silver, etc. They study in detail the care and furnishing of the kitchen, dining room, bedroom, and bathroom: these being the four most important rooms of the house. Rules for the daily care of the house, for weekly cleaning, and for periodical cleaning are given, the object being to make the methods thoroughly practical in every case. They practice every one of these things before they go away.

Optional courses are offered to those who do not wish to take the full regular courses, or who wish to take a group of subjects fitting their special needs. Some take the Manual Training, since a woman needs to be handy about the house, and there are occasions when a knowledge of carpentry is very useful. Others take up woodcarving, the designs being original or copied from books. Last year we had a number of girls who took the course in Horticulture, but this term not a sufficient number applied to make up a class, as there must be at least six students for each optional course. In this class they have the cutting of slips, the planting of seeds, care of plants in general, and certain plants in detail. They work either in the garden, or in the greenhouse at the College, sometimes in a class with the men of the College, and sometimes by themselves. A number of girls have taken an option in the Poultry department. They have to study the care of poultry, their feeding, preparation for market, and care of eggs, and also gain some little knowledge of the use of an incubator. The last option is the Home Dairying. In this course the students have milking, churning, making of butter, and care of milk.

We cannot attempt in the short course in these electives to accomplish as much as the students in the long course, but the girls get a good practical working knowledge that will be useful to them in their homes, and widen their interests. If a girl comes prepared to work intelligently and to do *her* best, we are prepared to give her all *we* can in the three months course.

TUESDAY AFTERNOON SESSION.

OPENING REMARKS BY THE PRESIDING OFFICER, MRS. J. H. McNEILLY,
STONEY CREEK.

I consider it an honor to the South Wentworth Institute to be invited to preside at this session. It is also a pleasure to know that our Institute can be of any assistance whatever at this convention. I have always thought Mr. Creelman a wonderfully good-natured man, but I think Mr. Putnam must be equally so when he would undertake the management of six thousand women! Most men find it hard enough to manage one woman, but think of one man managing six thousand of them! I am afraid he will be inclined to make the same remark as Mr. Creelman made a couple of years ago: "When I first took up this work I could put all the Women's Institute correspondence in one pigeon hole in my desk, but now *I do not know what to do with you women.*" I hope that every wife and every daughter will be a member of the Women's Institute. I believe the day will come when they will be.

Now this afternoon I am pleased to welcome the lady delegates who were not here this morning; and I think surely all the Institutes must be represented this afternoon. It is also a pleasure to see so many of the ladies of Guelph present, and to know that they are interested in our work.

If there is one thing I appreciate more than another it is the social side of the Institute. I think we have struck the key-note by serving lunch. If we want to have a particularly successful meeting we put on the cards that tea will be served, and we are sure to have a good attendance. The social chat and cup of tea helps along wonderfully. I have heard it said that a woman's tongue is tied in the middle and is loose at both ends, and it certainly seemed to be that way at the noon hour to-day. I am sure we all

enjoyed the noon hour, and that the luncheon served here in the building has been the means of bringing the ladies together, and removing any stiffness.

In passing through the building I was much pleased to see the work going on. Miss Roberts' talk this morning was particularly pleasing, and I am glad to know that we are coming to see that there are other accomplishments for our daughters than music and the piano. I really consider it more of an accomplishment to make a dress well than to play a piece of music; even though the latter does require a great deal of practice, particularly if there is no talent. I taught music for a number of years, so that I know what I am speaking of when I say there is more money wasted on music than on anything else. Sometimes I have had pupils who were actually stupid, but I could not say that to their parents, because they would not think so, and would only send the girls to another teacher; and I might as well have the benefit of the money that was being wasted on their musical education.

PRESIDENT CREELMAN: I am particularly glad to welcome the members of the Canadian Household Economic Association from Toronto. It is most hopeful when we see the women of the cities coming to meet with women from country places for the general uplift of the homes of the country. Within the past month we had here at the Ontario Agricultural College upwards of six hundred teachers from the city of Toronto, who came to the Agricultural College to get inspiration for their work in Toronto; and does it not strike you as being a new epoch in the educational work of this Province when the people who are supposed to have advantages which we have not in the country will come to a country school so that they may tell the children of the city schools what can be done under country conditions? We have a repetition of this to-day. The members of the Household Economic Association have come here to see what the country women are doing in their home places. I wish you a hearty welcome and hope you may make yourselves comfortable under not the most favorable circumstances. Because of our crowded condition we cannot give the visitors all the attention we would wish.

PLAIN FOOD AND PLAIN LIVING.

BY MRS. BERTHA DAHL LAWS, APPLETON, MINN.

The first thing that appeals to me on the question of food is the place where it is to be prepared. I like to think of the kitchen as being the most important place in the house. In my opinion the kitchen is really the most important workshop in the world. That is a big statement, but I think we can prove it to be true. In the kitchen we are building the men and women of the country, our children can build strong bodies only by the food which comes from our kitchens. Can you then possibly think of a more important workshop than that? And yet, as a rule it is the most poorly furnished workshop in the world. Why? I do not like to go back on women, and still I think the reason is because women work there. You go into a man's workshop and how convenient it is; go into the kitchens of the buffet cars and note how compact and convenient they are. They may be tiny, but still the cook has everything he needs to work with; and everything is handily arranged. The result is more work and less wear and tear. In furnishing my kitchen I like to keep that in mind—to save strength and save

time. When I begin to put things in place I stand in the middle of the kitchen and think, "Where am I going to use them most," and then I put them in place.

I like a small kitchen. This may not be advisable when it has to be used as a diningroom, as is often the case in rural districts. On one side of the kitchen is the sink. I bored a hole in the bottom of my wood sink, then covered it all over with galvanized tin. Under the hole I put a piece of perforated tin; under this a large funnel is fastened; and to the funnel was attached a piece of garden hose, which was put through a hole bored on the outside wall of the kitchen. Now the water runs right out of doors into a pail or a barrel on wheels.

Above the sink are hung dishpans and other articles which are in constant use there. On the next wall there is a large window, and right in front of that window I have my kitchen table. It is made just the right height for me to work at. Castors are put under it so it can be moved to the stove when necessary.

For instance when I fry griddle cakes I do not have to walk back and forth from the stove to the table; I simply wheel the table over, and thus save steps.

On one side of the window are three rows of plain moulding, into which are screwed brass hooks. Here are hung egg-beaters, strainers, etc. I like to see the utensils hung in sight. You say they get dusty? No, I think not; they are used too often.

On one side of the window I have a row of shelves on which are spices, herbs, baking powder, soda, tea, coffee, etc., so that I do not have far to walk to get what I want. I have plain, white, muslin curtains for the windows, also a pot of parsley growing. Altogether my kitchen is a cozy and desirable room.

I have had mothers come to me and say, "I wish you could get my daughter interested in housework; she does not care for it; she does not want to do it." Then I have had the very same girl who absolutely refused to work in her mother's kitchen, come to my home and say, "What a cute little kitchen; how I would like to work in such a kitchen." In reality there is nothing in my kitchen that there is not in her mother's. The things in my kitchen are neat, clean, tidy, conveniently arranged, and I like to work in it; so do the girls.

The next phase of the subject is the things we are going to prepare in the kitchen; we must choose our food. What do you choose your food for, for look? or for taste? If you have plenty of money you can do this, but if you are choosing the food with a view to nourishment, it does not require so much money. Nature has wisely arranged that the most nourishing foods are the cheapest; but when you select the cheapest foods you must know how to cook them to supply the looks and taste. When I was a girl at school I thought it interesting to work in the chemical laboratory, and now when I go into my kitchen to prepare food I look at it in very much the same way. This makes the home work very interesting. Household work does not need to be drudgery; it is in the way we look at it. I have found much more drudgery in school teaching, nursing, and everything else I have done, than I ever found in housework.

I was perfectly delighted with my visit to the Consolidated School this morning. I hope every delegate will visit that school, because even if we have not a vote we usually have something to say about school matters and can use our influence. I do not know of anything more important, except the home, than a good school. Everything in this school is of the

best, nothing shoddy, and that always pays. The ventilating system is fine. If you will get some one to explain it to you you can get good ideas for your own home. Find out how the children are taken to and from school; note the interest the little folks take in the manual training and domestic science departments, and you will not be satisfied until you have a consolidated school in your own section.

I have been very much interested in this trip to the eastern part of Canada; and I was also intensely interested in northwestern Canada last June. I remember especially two homes we found in the west. One day we were driving over the plains of Assiniboia, and about noon came to a house where we thought we could get some dinner. A woman, who was not particularly neat, answered the door, and when we told her we wished to get some dinner, she replied that she could not manage it. I said I would be satisfied with some fried eggs and bread and milk, but she said, "I have not an egg in the house, and no butter, and I never have milk." "Have you just arrived?" "No, have been here for thirty years." The whole house was in keeping with the woman.

At six o'clock we came to another house. We went to the kitchen door, and the rosiest, motherly sort of a Canadian woman came to the door. She said, "You are the Institute people; don't you want something to eat?" Just fifteen minutes from that time she had prepared a splendid supper, and everything on the table was from the farm. I enquired how long she had been in the west, and she replied "Thirty years." They had come from the east without a cent: indeed, they borrowed the money that took them there. But they had got along well; the house was neat and clean and thoroughly comfortable; they had a piano, a great many books, and were happy and content.

These two families reached the west within two months of each other. They had about the same number of children, and about the same number of trials and tribulations, but the difference in their conditions after thirty years shows what two classes of people will do with the very same things to do with.

I was interested in the lady who was speaking when I came into the room. She said we should not be cooking all the time, and I agree with her. We should make our cooking simple and plain. We can enjoy the birds, books and flowers all the more after we have given some attention to the plainest kind of living. It is not to make drudgery that we do that but to escape it.

In taking up the subject of cooking I do not wish to suggest that I can cook better than the ladies in the audience, but I have made a study of the easiest way of cooking. I want to give you my talk just as I give it to the Institutes in the United States.

We cook proteid foods not to make them more digestible, but to make them taste better. Raw meat is more digestible, if free from germs, than cooked meat; raw eggs are more digestible than cooked eggs. Why do we cook eggs and meat? Because we do not like the taste of them raw. Uncooked starch is practically indigestible, so we cook the starch to turn it into sugar and start it on its way toward being digested. When we cook starchy foods we cook them in just the opposite way to that in which we cook proteids. Potatoes should be cooked rapidly, and the cooking stopped when they are done, then you have a floury, mealy potato.

The potato is three-quarters water and the rest starch, and when we cook the potato we are cooking starch. Put them into boiling water and keep them boiling. When cooked pour them into a colander to drain, then

back into the saucepan and shake over the fire. Do not cover them if you wish mealy, floury potatoes. If you will take a slice of potato and look at it through a microscope you will see that it is made up of a number of little pockets or cells. These are very tough. Inside are a lot of little, dry, wrinkled-up kernels of starch. These little kernels of starch, if eaten raw, will go right through your body without being changed. In cooking we want the heat to open up the little pockets of cellulose, and pop open the kernels of starch, so that the potato is floury and mealy. They are then sweet and more easily digested. There is a good deal of chemistry in the boiling of a potato; there is a good deal of art, as Emerson says, in the boiling of an egg. Potatoes can be boiled very nicely in the coal-magazine of your coal stove.

Now, let us take the egg as an example of the other class of foods. The egg has no starch. It does not need fast cooking. When you soft-boil an egg, the white is hard and the inside is nearly raw. I do not like that kind of an egg, and I know it would be hard for a sick person to digest. I put the eggs in a kettle and then put over them a cup of cold water for each egg. Put a dipperful of water for four eggs. Place over the fire. Use a dairy thermometer (they cost only 15 cents), and when the water is 175 degrees take the kettle off the stove and place it on the table for ten minutes. Then the eggs are cooked. You will then not have any guess work, but you will know just how the eggs are going to be. It is very much nicer to know before you sit down to the table how things are going to turn out.

Meat is three-quarters water, so that when you pay twenty cents for a piece of meat you pay fifteen cents for water. You see it is not a cheap food. The big difference between cooking an egg and cooking meat is that the egg has a shell to keep in the nourishment and the meat has not. In cooking the meat I must therefore make the shell to retain the juices. When I buy an expensive cut of steak and broil it, I have a delicious and palatable dish, but it is not cheap. But I can buy a cheap piece of meat, and by cooking it in an entirely different manner, may have just as satisfactory a result so far as nourishment is concerned, and will be much cheaper. I can buy a piece of meat, four to six pounds, for thirty cents, with hardly any bone. I tie it up in a solid chunk, and pour over it one cup of water and a half cup of vinegar, which are boiling hot, and let it stand over night. In the morning pour off the vinegar (which may be put in a bottle for use again), wipe, dust with flour, and fry quickly in salt pork fat until a crust has formed. Pour off the fat, and cover the meat with boiling hot water, and add seasoning. I believe in using herbs—they are cheap and give a nice flavor. Onions are at once a medicine and a food. Do not let the meat boil: just simmer on the back part of the stove from four to six hours. By cooking this meat on wash days, ironing days, or baking days, the question of fuel will be settled. It can also be started on the cook stove at breakfast time, and then brought into the coal-stove in the living room to finish cooking, for it does not need an intense heat.

In choosing our food we cannot depend on looks and taste: and we cannot depend at all on the weight. A pound of lettuce and a pound of beans weigh the same, but there is a vast difference in the amount of nourishment in each. We cannot depend on the price. We pay five cents for a quart of milk, and fifty cents for a quart of oysters, and get the same kind of nourishment and the same amount of nourishment. Personal taste, however, is a phase of the subject which must be considered. You know when the farmer feeds his cattle he has an easy time; the cattle cannot complain! But it is altogether different with the farmer's wife. She finds that her

family likes to have food to their taste, and it is necessary that this should be considered, for it may sometimes pay to give forty-five cents for taste, as we may be said to do when paying fifty cents per quart for oysters.

We have two classes of food. The one that builds bone, nerve tissue and blood, the farmer calls *protein*. (The farmer's wife will understand this chemistry because she hears so much about it). The protein is what costs. That is why the dairymen of Holland will pay twenty-two dollars per ton for bran.

Then we have the other class which does not build body. You never saw an engine that was any good standing still. What makes it run? Fuel. The engineer must put in the wood and coal and get up steam. We cannot digest wood and coal, but we do eat starch, sugar and fat; that is our fuel; it gives heat and strength, but it does not build in children a strong, healthy body. Now, does it not stand to reason that your husband going outdoors on a cold winter morning to chop wood requires more starch, sugar and fat than does a child two years old? If you give the child too much heat-producing food, what happens? He becomes feverish and eventually you see his skin breaking out in pimples. The food may be excellent for a hard-working, grown-up person, but is not the thing for a child.

Last evening I referred very hurriedly to an institution where I was working where there were 750 children. There were babies and children of all ages up to sixteen. I wish you could have seen them come into that institution—dirty, filthy, ragged—ninety-nine per cent. of them. They were not such children as you see in our country homes. Many of them had diseased bodies, and it was our business to build up strong, healthy bodies, if such a thing were possible. The bones of many of these children were so weak they could not stand on their legs, because the food they had been brought up on had not contained sufficient mineral matter. They had not had fruit and fresh vegetables. Medicine did not help these children much. If we could only get the children young enough we could cure them by the right kind of food and living. I wish you could have seen some of those children after they had been with us for a time! They were healthy and strong, and they appreciated their health.

In our choice of foods we want to get our money's worth. We all know that beans are the most economical food. You get more nourishment for five cents in beans than in anything else, but they must be well cooked. So must grains in order to be digestible. Never mind if you have to keep your fire going for a long time; when the stove wears out you can buy another, but when your stomach wears out you cannot buy another stomach.

I cook meal all night long. I can cook oatmeal so poorly that it would ruin the digestion of a lumberman in six months; and I can also cook it so well that it can be fed to a baby. I let the stove do the work, and the child does not have to. Then we have the food value of the different kinds of flour. Next comes cheese; and that surprises many of us. Cheese is one of the most economical foods we have. Of course babies cannot digest it, but you can. And where can we find better butter, milk and eggs than on the farm? You have to pay an immense sum in a hospital to be fed butter, milk and eggs. I often wish we properly appreciated these things.

A pound of meat is a pound of meat, is it not? No, not in food value. You say that the low-priced meat is tough. So it is; but because it is tough when you buy it is no reason why it should be tough when you eat it. Cooking is not worth doing unless it makes your food more digestible. I will guarantee to take a piece of meat that costs from six to eight cents a pound, and cook it until it is as juicy, tasty and more nourishing than a

piece that costs eighteen cents a pound. The cheap meat is fully as nourishing as expensive kinds of meat. If you do not believe this is true, when you go home get a piece of tenderloin steak and try to make beef tea. You can't do it. In the hospital we had to make our beef tea out of tough, cheap pieces of meat. If you can cook that piece of meat so as to retain the juices you have a nourishing piece of meat.

Potatoes and apples contain a large percentage of water. In the early summer the apple is green, sour, and has an unpleasant taste, but all summer long the heat of the sun cooks the apple until by and by the starch is turned into sugar and is digestible. The ancients called apples the "Fruit of the Gods." The potato in the fall is just like the apple was in the spring, because the sun has not got at it underground and turned the starch into sugar. Now, that is our purpose in cooking potatoes.

In passing I would like to say one important word. Nature gave us not only food but medicine. She did not know we were going to have so many drug stores, doctors and patent medicines, so she gave us her remedies, but most of us do not use them enough. When is it you buy patent medicine—and a large percentage of it is purchased by farming communities—is it not in the spring? Why? In the summer and fall you have lived naturally; had fresh vegetables, fruit, sunshine and air, but during the winter you live unnaturally, and so when spring comes you need a tonic. We make our houses as air-tight as possible, and feed ourselves on the richest, greasiest, and heaviest food we can get. If we do not feel well, we get still richer things to tempt our appetite. We say we have spring fever and go to the drug store and get "Sarsaparilla," or something of the kind, at one dollar per bottle; or, we get sulphur and molasses and give our bodies a big housecleaning. We should not need that housecleaning in the spring if we lived more naturally during the winter. There is nothing that will take the place of fruit and vegetables in our diet, and we should see to it that we have a good supply put up in the fall. This can be done in a cheap, simple way.

When I was lecturing in Nebraska, many people smiled when I spoke of fruit. They said, "Do not talk about it here; we cannot grow it." But a nice-looking old lady said to me, "I know we can grow it here, because for thirty years I have done so. We have always had fruit. We have a large family and have always been healthy."

At home I make very few preserves—just a little for company—but I put up gallons of fruit without a grain of sugar in it. You will find fruit will take the place of medicine, if you do not put too much sugar in it. Let the children eat plain, good sugar, but do not mix it with fruit acids.

Then comes the plain living part, which is just as important as the plain food. I never realized how much right living could mean until I went to teach in that orphan's home, where we took those little children with diseased minds and diseased bodies. There we studied the food problem just as I have mentioned. We bought the plainest foods, keeping in mind its nourishing qualities, and cooked it carefully. Then we used Nature's medicines—fresh air, sunlight, and pure water.

Any of you who have visited large cities like Chicago and New York will have noticed the children in the slums; how pale and unhealthy they look. This is the result of the lack of nourishing food, fresh air and sunlight. I have seen in a little room nine by nine, a family of seven. The room had but one window and right up against it was a red brick wall. A geranium was in the window, but it was a poor, puny thing, struggling for an existence. It never had a blossom. How could it? There were no

roses in the children's cheeks. How could there be? They had no sunlight. A place where plants won't grow is a wretched place for children to grow. You know how plants look that have been growing in the cellar, but the very same plants will become sturdy, healthy and strong, if grown outdoors in the sunlight.

Then we need plenty of water inside and out. I do not believe in drinking it cold with our meals, but between meals. The poor Jap never sees meat to eat: he lives also without stimulants. Drunkenness is almost unknown in Japan. But they drink a great deal of water. I met a gentleman who told me of their ways of living in Japan. The average Japanese, he said, drinks two gallons of water a day. They take a bath every day. Just as naturally as they breathe they bathe. That is a fine thing—to bring up children from the start so that they know what it is to have a body so strong, clean and wholesome that it is always ready to do their work.

Then we come to the subject of fresh air. You may as well call that a food. You can live several days without anything to eat, and you can live quite a few hours without anything to drink, but you must have air all the time. If you breathe pure air you will be strong and healthy, but impure air will be sure to make you sickly. I have gone into many homes, where the stables and even the chicken houses were well ventilated, but in the bedroom where I was put to sleep I found cobwebs on the windows, showing that they had not lately been raised. It does not pay to ventilate a house in this way. I am not guessing when I say there is not proper ventilation in the average farm home.

I have worked in a hospital in Chicago where there were hundreds of patients. They came from the farm principally—farmers' wives and children, and farmers themselves. In nearly all cases there was something wrong with their lungs or stomachs. They had every natural advantage and yet they were in that condition. What did we do for them in the hospital? In the day time we flooded the rooms with sunlight. We gave them the best of food—fruit, vegetables, milk, eggs, which were shipped in most cases from their own farms. At night we put them to bed in well ventilated rooms. These people were not wealthy. They had to work hard for their money. They paid from fifteen to twenty dollars a week, and a special nurse fifteen to twenty dollars more, but when they went away they never grumbled at the price. What did we do for them? We gave them scarcely any medicine, but plenty of good food, pure water, fresh air and sunshine. They could have stayed right at home and had everything we gave them, but they did not know how to use the things God had given them. If I had talked to these people ten years before they were broken down in health, they would have said, "I have not time for this and that," but ten years later they had to take time and spend months in a hospital. It did not pay; it was not good business policy.

I have spent a great deal of time in travelling, and have visited all sorts of homes in city and country, some very elegant and some very poor, and as the years go by I have acquired more and more respect for the people who live plainly, but live to suit themselves and not their neighbors. I am always glad to say I have not a parlor in my house and never will have. I believe the biggest room and the nicest room should be the living room. In my home my best furnished room is my kitchen. I like the kind of a home you get comfort out of: the kind the children will love to come back to after they have been away. It does not take much money to make that kind of a home.

I like to see people who dress to suit themselves, and furnish their homes in the same way. It is the same with food; nourishment is the principal part. However, many people live so stingily that the children leave home as soon as they can. This is even worse. I believe we should put as much comfort as possible into the country home. There is a great fascination to young men and women about the city and city life, and the only way the country home can counteract this is to make itself so interesting, so pleasant, so charming, that the young people will not want to leave it and go to the city. I have seen rosy-cheeked, happy-looking girls come into the large cities and drift into factory and store work at three and four dollars a week. It did not take them long to lose their rosy cheeks. In a little while you would never know they had lived in the country. Why do they do it? Why do they ruin their health in the rush and confusion of the city when they might be happy at home? They have been taught to despise woman's work in the home; they have been taught that the girl who stands behind the counter and sells bread tins is superior to the girl who fills the bread tins. That is wrong. When we have plain, rational living, and the easier time that comes with it, we shall have more time for rest. I know that an audience of country women is the poorest audience in the world to talk to about taking life easier, so I like a mixed audience, because sometimes the husbands will afterwards remind their wives of what I said, and sometimes succeed in getting them to take better care of their health and strength. The most unselfish thing we can do is to take such good care of ourselves that no one else is compelled to do it for us. Make a point of taking fifteen to twenty minutes rest each day after dinner. It will pay you even though you think it will not.

If you can add days and years to the end of your life does it not pay? Don't you know that Nature's debts must be paid? The longer you keep going the more she piles on compound interest. It pays to keep running along paying cash as you go, and not running on credit.

I would like to tell you a story of two boys. As they walked in a forest a dwarf came along and gave them two bottles of clear white liquid; one to each. He said to the boys, "In this bottle is the liquid of life, and whenever you feel yourselves growing tired, wornout or old, just drink from this bottle." The boys took the bottles. The eldest one said, "I shall put this bottle in a safe place, and after I have worked hard and am old, I shall drink its contents and be young again." The other one said he would do the opposite. The years went by. The eldest one had lost interest in his work, and had forgotten where the bottle was hidden, and died worn out and old. The other worked hard, but when he was weary and tired he would drink from the bottle of life. He never grew so worn out that he could not enjoy the fruits of his labor.

Many of us are like that elder brother. Not one of you would be satisfied to die in this rut of "all work and no play," but it seems so often that the good times never come for us. Don't you think it really would pay to make life so simple, so plain, and so easy that we could have the good times every single day as we go along?

* * * * *

The following is a summary of answers to questions regarding fruits:

Fruits are more of a medicine than a food, and I honestly believe we might save many a doctor and drug bill if we would grow plenty of fruit on our farms, and then put up gallons and gallons every summer for use during the winter. To do this we must put them up in a cheap, easy and

digestible form. I do not put a lot of sugar in fruit, because it makes it hard to digest. It is bad for children; absolutely injurious to sick people, and does not do anybody any great good. I do not like to stand and stir rich preserves over a hot fire. I do not like to do things that are hard and are of no benefit to any one.

I fill half the clothes boiler with cold water, put in the jars and lids and let them come to a boil while I am looking over the fruit. I use perfectly good fruit. Always use new rubber bands. Remove the jars from the boiling water and fill with fruit; put on the rubber bands, screw down half way only. Put enough cold water in the boiler to come half way up on the jars. Put some straw or thin boards into the boiler. Set the jars on these, but do not let them touch each other. When the water has come to a boil the fruit will have cooked tender, if it is such soft fruit as berries. I usually allow five minutes for peaches and pears; half an hour for tomatoes; two to three hours for beans; six hours for corn. Do not screw your covers on tight at first, or the jars will burst. If you do not like fruit without sugar, make a syrup of half a cup of sugar to a pint of water, and pour over the fruit before boiling it. I have kept fruit for three years done up without a bit of sugar. It is easy to do and is more wholesome.

ADDRESS.

BY C. C. JAMES, DEPUTY MINISTER OF AGRICULTURE, TORONTO.

When some time ago Mr. Putman gave me a rather pressing invitation to address his workers, as he called them, I had no idea you were going to turn out in such large numbers. The large and representative gathering before me certainly augurs well for the success of the Women's Institute work. We have seen many lines of work inaugurated and carried out in connection with our Agricultural Department, but I do not know that we have ever started any work, or have seen any work started, with greater promise than that which is being carried on by the Women's Institutes.

A very interesting development has taken place in connection with the history of the educational movement of the world. That is a big theme, a big subject; and this, of course, is a part of it. Perhaps it may be worth our while for a moment or two to glance over the development that has taken place.

Those of you who have made any careful study of the development of the civilized peoples of the world know that in the early ages the educational movement was confined entirely to one class. It was not very many centuries ago that the education of the world was shut up within the cloisters of the monasteries and abbeys of the Old World. At that time education was restricted practically to one class—the teacher and the preacher were one and the same person. Following the development of mankind we see educational movements gradually emerging from the dark cloisters and permeating other classes. The next class to be reached, after the clergy, were the interpreters of the law, the lawyers.

Gradually there arose in different parts of the Old World what were known as Philosophical Societies. As you look over the records and reports of these philosophical societies you find the discussions were of a wide and varied nature. The subjects that were brought up and treated related gen-

erally to questions of religion, law and philosophy. After a while as human activities became more varied and more developed, various phases of scientific principles were brought out. There we find the first glimmerings of our scientific development. Gradually the sciences of chemistry, physics and medicine began to be developed by some very crude and simple experiments. It was found that certain applications of these could be made to everyday life; that along certain lines of manufacture science could be applied; that in connection with transportation certain sciences could be applied. And so there were gradually developed societies dealing with the great natural sciences. Then we have the building up of the scientific schools of Europe from which so much benefit has come to all classes of mankind.

Thus you will see that the learning which originally was shut up within the dark walls of the early monasteries, and that was monopolized largely by the early churches, began to move out into larger and widening circles and began to affect those classes which we now call the professional classes; and later on began to influence the great manufacturing industries of the world.

As time progressed this movement was getting closer and closer to the great masses of the people. Now, if you will follow out that movement you will find it will bring you down to about the middle of the last century. Then it began to be found that not simply in connection with the industries and great undertakings of the towns and cities could these scientific applications be made, but that the rural life also could be touched, and that in connection with agriculture—or farming, as we generally call it—there was a need and an opportunity for the application of the modern developments of natural science.

The first applications of modern scientific discovery to agriculture were of a very crude kind, and as we now examine them, of a rather ludicrous nature. Gradually the matter began to be straightened out, and twenty or twenty-five years ago agriculture was finally and definitely placed among those great undertakings that could be assisted by scientific investigation and that could be developed in harmony with the world's progress. You go, for instance, to Germany, or France, or Denmark, and you find all through those countries that agriculture is becoming more and more scientific, and is being developed along lines that are rational, and at the same time remunerative.

Only a few years ago, however, a very important discovery was made in connection with the great agricultural work of this continent, and that discovery was, that not only was there an agricultural industry and agriculture to be studied from a scientific standpoint, but that upon every farm there was a farmer. Now, perhaps that may appear to be a truism that means nothing, but if you will look back over the history of the world, or if you will look at the undeveloped countries of Europe, Africa and South America, you will find that there the farmer has not yet been discovered. We have found him out, so to speak, and have taken hold of him, and have brought him and his fellows together into societies, associations and Institutes. We have found that not only must science be brought to bear upon the great agricultural industry—that is, not only must the work of agriculture be studied in its methods and processes as a science—but the man who is over and above it is of far more importance than his work. The farmer himself has been discovered and the civilized world is to-day endeavoring to see how he as a man, as a human being, as a worker, as a liver in the country and upon his farm, can be improved and assisted.

But now we have made a discovery which to my mind is far more important than the discovery of the farmer. We have found out that the farmer has a wife and that he has a family, and for the first time, I believe in the history of civilization the world is beginning to pay attention to assisting and helping the farmer's wife along rational lines. I do not know that it has been attempted before. I do not know that a movement has ever been successfully inaugurated before to help and assist the farmer's wife along lines truly scientific, educational and rational.

Now, when the farmer's wife was discovered we began, through the energies of those who were particularly interested in that movement, to gather together the farmers' wives and daughters into associations or societies, and we have here to-day the Women's Institute. I do not know of any movement yet inaugurated which promises to do more for the general welfare of this country than the Women's Institute, if properly helped and properly directed.

It is worth noting how we began at the wrong end of all these things. I have on one or two occasions spoken about our educational movement, and have referred to the fact that we have begun at the wrong end and are now trying to get things back into their proper form. I have spoken of how the farmer, the oldest resident of the earth, has been the last one in the world to receive attention; how in many regards we began with the wrong things and are now getting things righted. How, for instance, we began in our educational movement to study the things of less importance, and how we are now beginning to put before the pupils the things which most of all concern them in their everyday life, adding the others as they may need them. This building I suppose is one of the very best examples that could be given of the point I have just made, that we have had to come down to modern days to see that education shall be of a practical nature from the very start. This building has followed many other buildings in which classics and other subjects have been taught for centuries. We have now begun to give educational work a fresh start along right lines.

I have said we first began to study the farmer's work and methods, making a systematic examination of them as a curiosity, so to speak, but in recent years we have studied the farmer himself. Now let us see how we have turned things around when we pursue the latter course. Take our Institute work, for instance. Among the first questions that came up for consideration was the farmer's stock—his hogs, cattle, horses, and sheep; and I think we have made more progress in connection with the handling of the farmer's stock than in any other line of experimental work; but while for many years we studied that question of how the farmer's stock could be better housed and fed, we forgot that on the farm there was something of greater importance than the farmer's stock and his barns. We paid attention to the buildings—the stables, the barns—and to the working of the fields, and have been working inwards from the outside, and now only within the last few years have we begun to touch the farm life and to get to the very centre and core of the whole thing. Where is the centre of the farmer's work? Is it to be found in the stables and fields, or is it to be found within the four walls of his own home? If we are going to revolutionize the farming industry in this country; if we are going to start it along lines of development that will be lasting and helpful, and that have the possibilities of raising the farmer to that status which is his due, we shall do it not by giving him better barns and better stock, not simply by teaching him how to plough a straight furrow, but we shall do it only surely and securely by

working this revolution from the *inside*; by getting right at the very heart of the farm; by getting right within the farmer's home.

As I say, we have made the discovery late in years, that the farmer has a wife and children. This Women's Institute is bright with promise: it is filled with all the possibilities of success; it promises more than any other movement that I know of in connection with our agricultural work, because it begins at the right point. It works from the heart of the home out, and if you can improve the homes of the farms of this country I guarantee that all other questions in connection with farm work will be rapidly and rationally settled.

I would like to quote from an article published in a paper in the United States. A woman worker in that country said:

"For many years we have been educating our boys and our girls, the future farmers and farmers' wives of this country, along the line of the three R's. We have felt that education simply meant the training of the children in these three branches. It ought to be amended, and it is being amended in our days. It is only when to the three R's we add the three H's that the homes of our country will be properly developed, and the three H's are the Head, the Hand, and the Heart."

It seems to me that I can leave with you as Women's Institute workers, no better message that you can carry home with you than this one point—not original with me, but picked up elsewhere: Plan your work, arrange your programmes, and carry on your operations by keeping always in view these three things. The Institute which appeals only to the head will not fully develop the farmer's home. The Institute which simply teaches the hands how to sew and to bake and to do housework will be lacking in two very important elements. The girl or the woman who is trained simply in the head and in the hands is lacking in that which is highest and most important in her life. Keep, then, the education of the head, the heart, and the hands always in view in your work and your success must be assured.

May I just speak a word as to the pioneer work in which you are engaged? You have taken into your hands a great missionary work. You are the pioneers and you will meet with some of the success and some of the failures that others have met with. It will be much better to get only a small group of girls and women in your locality working along these lines and working successfully than to gather great crowds together simply for amusement. Lay out your work along the lines I have suggested and do not be discouraged by small attendance. The Women's Institute is starting with better promise of success than did the Farmers' Institute twenty years ago. The latter met not only with indifference from those to whom it was directed, but it met also with a great deal of harsh and unfair criticism. You are starting out with all of the best work of the Farmers' Institute to guide you. You are working in a movement which receives the hearty commendation of all persons interested in our educational welfare. You are engaged in a work which means more for this country than the Farmers' Institute work, for, as I stated before, if we pay attention to the bettering of conditions in the home the success of the farmers of this country will be assured.

I trust that you will not be discouraged, but that you will carry on the work with the enthusiasm which pioneers in all movements have had. That you may carry it on successfully and well is our desire. We know that when women are thoroughly aroused, and when with zeal they determine to uplift humanity, and take hold of a question of this kind, they will succeed.

ADDRESS.

By HON. JOHN DRYDEN, MINISTER OF AGRICULTURE FOR ONTARIO.

I am very pleased indeed to spend a few moments here this afternoon in talking to the representatives of what I consider the most important Association of all the important ones we have in the Province of Ontario. Your husbands and your brothers have been arranging and planning for the talks and discussions we are to have at the Winter Fair regarding the proper care of the sheep and the cattle and the chickens and even the swine. You have an entirely different work in hand. You have just listened to a lecture on the proper feeding of boys and girls. Which is the more important? There is no comparison in the value of your organization and the one to which your husbands and brothers belong. I would like to emphasize that again; this is the *most* important because it deals with the home. How much we have yet to learn about ourselves. I would give a good deal if I could have found out when I was a young man what I know now. We were taught to study mathematics, and grammar and geography, but they are nothing in comparison to being taught to take care of oneself and how to maintain the health and strength of the body. And so I say there is no subject more important to be discussed in this country than that which pertains to our *homé* life.

I think if the women belonging to these Institutes were men I would call them statesmen, because the work which they have in hand is the building up of the nation. And what is the nation composed of? Not swine, not horses, not trees and forests; no, it is the men and women of the country who make the nation.

I want to say further that this organization has made rapid progress. I never dreamed that we could have covered so much ground and interested so many people in our work as we have succeeded in doing. It had a small beginning but it has a growing and broadening influence in this country. I wish you every success. Do not be discouraged if you do not succeed as well as you would wish. It takes a good while to educate men and women in any direction different to that they have been following in the past.

Think of the future of this country and remember that you are not working for to-day. You are laying the foundations of this work which will go on and increase in strength and power and influence as the years go by, and no one can tell just how much value meetings such as you are holding here will be to the country.

I should like to call you statesmen, but you are women and not men, so I cannot. I had a new name given me to-day for a farmer's wife, and when I go home I am going to tell my wife she is now a "farmeress." But if I cannot call you statesmen I can tell you that you are working along lines for the betterment of the country just as much as are the men of the country. I cannot do much for you except once in a while give you a little talk. I know you will never ask me to do anything that is unreasonable, and I am willing to face the Legislature and present the claims of the Women's Institutes, knowing that they will not refuse anything that is asked by women; you see they know the influence of the women in the constituency. I shall be glad to do all that lies in my power to assist the work of the Women's Institutes.

ADDRESS.

BY MRS. JOHN HOODLESS, HAMILTON.

When I came into the room it was as a listener not as a speaker, but as my sympathies are so heartily with the work of the Women's Institutes, I feel grateful for the privilege of saying a few words to you. When Mr. Creelman pinned this badge on my dress I said: "Although not fond of wearing badges I would rather wear the badge of the Women's Institute than that of any other organization in Canada, because I believe so thoroughly in its power for good."

I have often been asked "Why are you so interested in the Women's Institutes?" It may be for the same reason that leads so many city men to buy farms after they have acquired a competence; the innate desire to get back to the land, our natural inheritance. But there is a stronger reason still why I should be interested in the work of the Women's Institutes, or rather two reasons. First, I was born and brought up on a farm, and know something about its limitations and advantages, which, after twenty years of city life enables me to make comparisons, and suggest co-operation from personal experience. That my respect for and belief in the possibilities of agricultural life has remained is practically demonstrated in encouraging my only son in choosing the Agricultural College as the institution best fitted to give that liberal education which is so necessary in this young country, and in the belief that the knowledge acquired in that college will enable him to be of real value not only to the cause of agriculture but to the country of his birth.

Mr. James said a few moments ago that you were pioneers in this movement. I can endorse that statement heartily. In 1899 I was appointed to represent technical education for women at the World's Congress of Women, held in London, England. In my report I mentioned the new movement in Ontario to give to women in rural districts some of the advantages enjoyed by men. At that time only two Institutes were organized, the first one at Stoney Creek, and the second one at Whitby. But Mr. F. W. Hodson, at that time Superintendent of Farmers' Institutes, had given every encouragement in his power and had secured for us the same recognition by the Government as the Farmers' Institutes, and a grant, I think, of \$10 a year to each Institute. So that I was able to tell the Englishwomen that the organization had been recognized by the Government as of value to the State. It was astonishing how this organization appealed to the old country people. I was deluged with enquiries, even from such important leaders of the agricultural movement as Lady Warwick. At that conference I heard reports from many nations, and not one reported such an organization for women in the rural districts as the Women's Institutes of Ontario. So you see you are making history, and are truly pioneers in this great movement. Don't get discouraged if you are not making as rapid progress as you wish; everything has to grow from small beginnings.

If I had time to tell you of all the discouragements I have had in the effort to secure better home education for our girls, you would not mind the little difficulties you have to meet with in your organization. Yet when one knows they are on the right track they can afford to be patient, and take time to overcome difficulties. As a result of patient, unswerving effort we have to-day such schools as this beautiful Macdonald Institute, with its handsome residence for students; a place has been found for household science in our Normal schools, and public and high schools, in our Univer-

sity, and nearly all our best ladies' colleges. This is the result of about ten years' effort, so imagine, with these agencies to help you, what you may do in ten years. You have in this organization a tremendous power for good, and that it may be used to its fullest extent is my most earnest wish for you.

DISCUSSION ON DIFFERENT PHASES OF THE WORK.

TOPIC No. 1.

"As much of the success of the Institute depends upon the ability and enthusiasm of the officers, they should be chosen with great care, and with a view to their fitness for the office rather than their social popularity."

MISS LAURA ROSE, Guelph: I think the greatest success depends on the officers. It is lamentable that so many officers have taken up the work simply because no one else would do it. This one and that one is asked to do it, and then finally some woman who has not much else to do takes the office, and perhaps she has no qualifications whatever for the work. The progress of such Institutes is slow, or else they dwindle down and die. It is just because the officers are not qualified for the position. I do think that if there is a woman who has executive ability, one who is accustomed to occupying positions in connection with the Missionary Society, etc., she should feel that it is her duty to take office in the Institute, even though she may be a very busy woman. I would say to every Institute that it is well to meet and talk these matters over before the annual meeting. Then you come to the annual meeting ready to elect the women whom you think, after deliberation, are best suited for the office.

MRS. J. E. BRETHOUR, Burford: What about changing the President?

MISS ROSE: Change them every year or two years, but I think the Secretary should retain her office. It seems to me it keeps up an interest in the work to change the President annually.

MRS. NICHOLSON, North Bruce: If you have the best woman in the district for President would you think it wise to change?

MISS ROSE: Yes, take the next best; and perhaps by the end of the year she may be as good as the other one.

SUPERINTENDENT PUTNAM: When electing a President it is well to select one from a different part of the riding each year.

MRS. M. E. GRAHAM, Ailsa Craig: How would it be to select a President from among the women who attend regularly and are there on time?

MRS. DR. ROBERTSON, Milton: Do you not think it better to have the district officers live near together?

SUPERINTENDENT PUTNAM: I may say in regard to pay for Institute secretaries that we should first have the Institutes on a better financial basis. We must put ourselves in a position to pay the secretaries in proportion to the work they do. The district secretary who does her duty and complies with the many requests made by the Department is necessarily at much loss in both time and expense, for which she receives nothing. I shall make a recommendation that the grant be increased. Not only should we have more funds for the main Institute, but a small grant should also be made to the branch Institutes.

MRS. W. W. FARLEY, Smithfield: I think we should have \$25, the same as the Farmers' Institute.

TOPIC No. 2.

"Commence meetings at the time advertised. If 2 p.m. is agreed upon as being the most suitable time make a point of commencing sharp on time. This will give those from a distance an opportunity to leave for home in good time. When an evening session is to be held, it has been found a good plan to close the afternoon session at five o'clock; have tea; start again at half-past six, and then close at eight o'clock."

MRS. WM. PURVES, Columbus: That would hardly do in the winter season in rural districts. It is difficult for busy women to get to the afternoon meeting at two o'clock. It might work all right in summer.

SUPERINTENDENT PUTNAM: I may say that in this, as in many other things, each Institute must decide what is best for that district. In some sections one hour is suitable and in another section another hour is found more suitable. The point is to agree on the hour of meeting, and then begin on time.

MRS. ERLAND LEE, Stoney Creek: If the President is detained in any way, should the Vice-President take the chair at the right time and proceed with the business?

SUPERINTENDENT PUTNAM: Yes, that would be quite in order.

MRS. D. MCTAVISH, North Bruce: I would like to say a word about having the evening sessions a little earlier. It is all very well for the ladies of the district, who had only one meeting in the month, to think it does not matter what time they get home. They have time to rest during the week, but it is very hard on the delegates who are perhaps a whole month at the work, to have to attend late meetings every night in the month. When one gets to her boarding place at half-past eleven and twelve o'clock she does not feel much like starting out early in the morning for a forty-mile drive. I have heard the clock strike twelve on a Saturday night before I had reached my boarding place, and I assure you one is not in very fit condition for the Sabbath. I think we should arrange that the evening meetings be held as early as possible. I know the delegates would appreciate it, and I think it would be better for the Institutes too.

TOPIC No. 3.

"Arrange the list of members alphabetically, and have each one in turn responsible for the next meeting's programme."

MRS. JOHN B. HAIST, Pelham Union: We find that if this plan were carried out, and members knew that they would be responsible for programmes, they would not long remain members.

MRS. CLARA E. MYLES, Kimberley: When we appoint ladies to get up a programme very few of them do so, and we have often been left without a programme.

MRS. H. MONTGOMERY, Drayton: I think it would be better to get the consent of the ladies. We are trying to have "young ladies" programmes, and thus get the young women and girls interested in the Institute.

MRS. EDWIN PEART, Nelson: In our Institute we appoint at the meeting being held those who are to be responsible for the next programme. We choose those who are willing to do something.

MISS JESSIE HILLS, Toronto: I visited Ailsa Craig branch last summer, and found they had planned their meetings for a year ahead. Their plan is to take two subjects as different as possible for each meeting. In this way every member knows what is going to be given at each meeting during the year. It worked satisfactorily.

MRS. GALE, Galesboro: We appoint a Programme Committee for three or six months, and this committee is responsible for the programmes during that period. It works well.

MRS. J. J. HALL, Shelburne: We arrange for our subjects a month ahead, and get everyone to bring all the information they can on that subject.

TOPIC No. 4.

"Topics suitable for the various seasons give added interest to the meetings."

MRS. COLIN CAMPBELL, Goderich: This is the plan we have adopted in West Huron, and it works successfully. We now have our programme arranged for the next six months.

MRS. E. G. GRAHAM, Brampton: At one of our meetings we invited the ladies from Halton to give us the programme for the meeting, and we hope to reciprocate. I think the subjects suitable for the season is a good idea.

MRS. M. E. GRAHAM, Aisle Craig: Yesterday Mr. Putnam told us he had secured three pages of "Canadian Good Housekeeping," which will now be the official organ of the Women's Institutes. Might I suggest that suggestions for programmes be given in these columns, so that we may all work together. We might have a lesson on work as given to the classes at the Macdonald Institute.

TOPIC No. 5.

"When two delegates are at a meeting they can take up most of the time, so that it has not been found advisable to arrange for much local talent at that time. At the same time the members, and particularly the officers, should be prepared to take part in the discussions, and assist in any way possible to make the meeting a success. Delegates should not be expected to do it ALL. Their subjects are in the bulletin, and it is not fair to ask them to address a meeting on a subject for which they are not advertised."

MRS. W. W. WILKINSON, Cheltenham: I think it makes the meetings much more interesting to have some of the local ladies take part, as well as the delegates.

MISS BLANCHE MADDOCK, Guelph: I think it is interesting to have a short paper or a few words from one or two local officers or members. In a few Institutes I have found lengthy programmes prepared, which is very unwise. I like one or two musical selections, or a recitation, or a short address, but when there are three or four musical selections, two or three recitations and an address, the afternoon is taken up almost entirely by local talent. This is not fair to the delegates, nor to those who have come to the meeting expecting to hear delegates speak.

MISS AGNES SMITH, Hamilton: This, like every subject, differs under different conditions. When there is only one delegate and there is an afternoon meeting, it is somewhat difficult to carry them on alone. In summer meetings when two delegates are sent out it has been my experience that the afternoon is too short to allow for very much local talent. Then, too, the members have come to hear the delegates; and as they are expected to have had different and special training it is only right that the Institute should expect to hear something different than they would hear from one of their own number. If a lengthy programme is prepared the delegates have no time to tell what they do know. Then, for the evening meeting, it might be wise to work in some of your local people, such as school teachers, school

trustees, and so on. I quite agree with the suggestion that delegates should not be expected to speak on any subject for which they are not advertised. Different delegates have made special preparation along different lines, and no one can be an encyclopedia of information on all subjects. We can be more helpful to others when we speak on the subjects which we have specially prepared.

MRS. WM. PURVES, Columbus: I would like to make a suggestion here. In our riding we are not holding our own, and it might be that we would get over the difficulty by co-operating with the Public School and High School Boards, and hold meetings in the schools when delegates are present, rather than hold them in public halls. I would suggest that at the evening meetings the Women's Institute should be allowed five or ten minutes to advertise what it is doing. We do not often get the gentlemen together, and I think when we do it would be a good thing to let them know just what we are doing.

TOPIC No. 6.

"It is doubtful whether it is advisable to hold the annual meeting at the time the delegates visit the Institute. In many places it has been found that the business is rushed through in an unbusinesslike manner, and delegates are not given time to do themselves justice."

MISS LILIAN D. GRAY, Toronto: I have found from my experience in the work that it is not well to hold the two meetings together, because, as suggested, the business is hurried over. If the officers are being elected that is the most important part of the meeting, and should be given due consideration. Where it can be arranged they should be held separately. When a delegate is present and the annual meeting is being held, the delegate has not time to do her part and have a discussion. Many ladies are desirous of asking the delegate questions, and if they cannot do so they go home disappointed.

MRS. JAMES GARDNER, Kemble: In regard to the election of officers I would like to say that in North Grey we have nine branches. They each hold their annual meeting and state who they would like for district officers, and these are voted on at the district annual meeting. It works very nicely and gives all the members in the riding an opportunity to say who they would like for district officers.

MRS. D. MCTAVISH, North Bruce: I would like to endorse what Miss Gray has said. My experience has been that the business is rushed through, or else the delegates have not time to do their part. I think it is better not to have the annual meeting at the time the delegates are there.

MRS. J. J. HINMAN, Grafton: We have a branch Institute in our district, and I would like to know how you proceed with the election of district officers?

SUPERINTENDENT PUTNAM: No uniform method has been adopted. I hope to get a workable plan before the annual meetings are held.

MRS. CONN, Paisley: I would like to know whether it would be possible to have the membership and financial year end at the same time.

SUPERINTENDENT PUTNAM: I have been discussing that with Mr. James, the Deputy Minister, and I think it is likely we shall arrange to have the membership and financial year end at the same time. It is confusing as it is now.

TOPIC No. 7.

"Make the Institute work a little more of a study, but not a school. The afternoon must mean to the busy people who come to it a pleasureable and restful afternoon. The information given should be clear, practicable, and applicable to those present."

MRS. ERLAND LEE, Stoney Creek: We have had a proposition for the giving of lessons before us for a long time, but I can hardly see how it would work. Since coming to Guelph, I have been thinking it might be arranged to send one of our members to the Macdonald Institute.

MRS. M. E. GRAHAM, Ailsa Craig: We had a two weeks' course of cooking lessons; twenty-five cents a lesson or five for one dollar. Each lady taking the lessons was supposed to join the Institute. It was very good indeed.

MISS AGNES SMITH, Hamilton: I think the time has come when we need some outside help in most of the Institutes. We have Mrs. Graham's suggestion that the Institute might send one of its members to take the three months' course at the Macdonald Institute, and pay her expenses on the understanding that on her return she would give to the Institute a course of lectures on the work she took up at the Macdonald Institute. You would, of course, have to send an all round good student. I am so glad to know we shall have three pages each month in "Canadian Good Housekeeping." I have felt for a long time that we should have a bulletin published, at least during the winter months, to which we might look for specific assistance. To me this is a vital question in Institute work.

MISS ISOBEL RIFE, Hespeler: Would it not be well for each Institute to have a little leaflet published at certain periods?

SUPERINTENDENT PUTNAM: We can get them printed much more cheaply by getting it all done at one place. The information should be sent to one central place. I think we can make good use of the three pages at our disposal in "Canadian Good Housekeeping," and I shall look to the Institutes to send me interesting and helpful information for publication from time to time.

TOPIC No. 8.

"It is suggested that there should be more study in regard to the economic value of our foods; demonstrations should be more along the best ways of cooking meat and the plainer kinds of food, and the fruit and other things which grow on our farms, and not how to prepare fancy dishes from oranges, pineapples and bananas, which we have to buy."

MRS. WM. PURVES, Columbus: A year ago this summer we asked for a meat demonstration, and Miss Mongan addressed meetings throughout our riding on this subject, with great success. I would like to let the ladies know that the resolution of South Ontario Women's Institute to have bread wrapped is now receiving the attention of the Provincial Secretary. We hope to see it dealt with by the Legislature before very long.

SUPERINTENDENT PUTNAM: At the Fruit, Flower and Honey Show, held in Toronto, in November, we made an exhibit, showing the uses of different varieties of fruit. It proved to be very interesting and instructive, not only to those who visited the exhibit, but to those who prepared the same, for we found that we had much to learn regarding the preparation and uses of fruits. Next year I hope to arrange with two or three of our demonstrators to secure samples of every kind of fruit, and have each variety prepared in the way or ways to which it is best adapted. These will be kept in a central place and used for illustration purposes at the Fruit, Flower, and Honey Show, and also at the Toronto Industrial Exhibition.

MRS. ERLAND LEE, Stoney Creek: I have often thought we might make use of food charts in our Institute work.

SUPERINTENDENT PUTNAM: Yes, it has been found that the attention of an audience can be held much better where there is something to attract the eye as well as please the ear.

MRS. J. E. BRETHOUR, Burford: Could these charts be procured by individual Institutes?

SUPERINTENDENT PUTNAM: Yes, I can secure them very cheaply. When I get one of the kind we want it will not cost much more to get fifty copies than five.

MISS LAURA A. DYNES, Burlington: We are a long way behind the Americans in our use of apples. I noticed yesterday that even at the Macdonald Institute there was not an apple on the table. This is a food and a fruit which we might pay more attention to.

MISS LILIAN GRAY, Toronto: I would like to say in justice to the demonstrators that they would often be willing to demonstrate the cooking of a roast, but they labor under many disadvantages. In the first place they have only spirit lamps, and you all know it is impossible to prepare a roast on a spirit lamp. Then, in other places we have been asked for meat demonstrations where the butcher only calls twice a week, and it seems very often that the demonstrator arrives the day before the butcher and finds no meat, and fruits are usually not in season when they are there.

SUPERINTENDENT PUTNAM: Of course the ideal conditions under which to hold Institute meeting and demonstrations is where there is a stove and kitchen fitted up for regular cooking classes.

TOPIC No. 9.

"Mind culture should not be overlooked. A beautiful poem read and explained would be an acceptable change once in a while. Notes on travel by some one who has been away from home would bring glimpses from abroad to those who stay at home. Ten or fifteen minutes devoted to an informal discussion of the birds and flowers seen during the month would open the eyes of many to the beauties near at hand."

MISS LAURA ROSE, Guelph: I think perhaps we give too much attention to the physical and not enough to the mental. Our minds are just as much in need of food as our bodies, and if we wish to keep young we must keep our minds well informed. It is nothing but cook, cook, cook. You see it in the faces of women. We want to grow old gracefully and keep young naturally. To keep young naturally we must read and must fill our minds with beautiful thoughts, because we know the face reflects the mind, and what is it makes one person more attractive than another? It is not the features; it is the mind behind the face. The more I travel over the country the more I see this. I think in our meetings we should have some new thought, some new idea that a fellow sister has put into our mind. Then, in regard to the little discussion on the birds and flowers. As I go over the country I feel hungry to know the names of the different things I see. If I could just say, "There is such and such a bird," instead of saying, "What a beautiful bird." It is just the difference between saying, "Look at all those lovely ladies," and saying, "Look at lovely Miss so and so." Now that our school children are taught so much nature study, why not have the school children come to one of your meetings and give a little paper on birds, flowers or insects? The very fact that they were doing something of the kind would be an incentive for them to study at school. I think this subject of mind culture is one of the most important we have discussed this morning.

MRS. JOHN BANKS, LAUREL: I am in sympathy with what Miss Rose has said. In our meetings we try to vary our programmes, and to take ourselves for a little while from our home duties. In one of our meetings we had a discussion on "The Art of Conversation." At another meeting we had a talk from a gentleman who had just visited England, Ireland and France. Every once in a while one of our members gives a paper of talk along the lines which have just been mentioned.

MRS. W. R. VANDERVOORT, Sidney Crossing: I am heartily in sympathy with this subject. We vary our programmes in the manner mentioned. Some of our members were saying it was nothing but cook, cook, cook all day and all the time. It is all very well to cater to the stomach—especially when the ladies say that is the way to gentlemen's hearts—but we should also pay attention to the mental side of our being.

MRS. WM. PURVES, Columbus: I find that everything by way of education that is brought into the mind has a tendency to broaden it. We want to know more and more.

MISS AGNES SMITH: Even the subject of cooking can be taken up from the theoretical as well as the practical side.

MRS. JOHN BANKS, Laurel: We have purchased a library—a small one of course—containing fourteen volumes. We sometimes hold a discussion on the book which a member is reading, or have an essay on the same. I could tell you of an instance where a lady was so delighted with a book she got out of our library that she read it aloud to her family.

MISS AGNES SMITH, Hamilton: We might do that in our Institute work, bringing a paragraph, etc., to the meeting. If we would bear the Institute in mind when we are reading it would be very helpful and interesting to mark a worthy passage and bring it to the next meeting.

MRS. CLARA E. MYLES, Kimberley: I think that instead of buying all our books on cooking and sanitation we might buy a book of good poems, and have selections read at the meetings.

MRS. CONN, Paisley: We have found many helpful suggestions in the National Council Year Book.

MISS AGNES SMITH, Hamilton: The matter of buying miscellaneous books is one which must be settled locally. In many places there is a local library, but if there is not then it might be a good plan to make the Institute library more miscellaneous in its character. In Amherst Island everyone on the Island is a member of the Institute, and all have the use of the Institute books. The National Council of Women are compiling a small bulletin on the laws that affect women throughout the Dominion of Canada. This can be had for twenty-five cents. We might all learn a little more on this subject. Very few of us know anything of the property laws, and it would often be better for us if we did. This might be a handy bulletin to have in the Women's Institute libraries for reference.

WEDNESDAY AFTERNOON SESSION.

OPENING REMARKS BY THE PRESIDING OFFICER, MRS. J. E. BETHOUR,
BURFORD.

When our Superintendent, Mr. Putnam, assigned the last session to me to preside over I was pleased, but when I see all the tired faces before me, I cannot help thinking that the earlier sessions had more inspiration. However, I trust you will bear with me, as I think I must feel very much like the curate preaching his first sermon, so in future I shall have a very kindly feeling toward young preachers.

I cannot let this opportunity pass without adding my little word to all that has been said upon a subject very near my heart. "The Benefits of Women's Institutes." I think it is the duty of every woman in the community to be a member of the Institute. We want the bright women who have had more advantages and better opportunities, to give the benefit of their knowledge and experience, and hold out a helping hand to her neighbors who have not had the same advantages. We want the tired housewives to come, and perchance they may learn some method by which they may do their work in a simpler way, and so gain time. As Mr. Dryden remarked yesterday, "Surely twenty heads ought to have more ideas than one." Just think of all the women in a community meeting for the express purpose of discussing housekeeping, home-making—themes which are dear to the heart of every good woman.

There will never be more time and never less to do. The only thing for us to do is to simplify our mode of living and so gain time. When a woman finds she has no time for anything but work it is high time for her to "take stock," as it were, and cut something out.

Fifty years ago the whiteness of a woman's kitchen floor and cellar steps was the gauge by which her housekeeping was judged. Now we would think a woman quite foolish to have a white kitchen floor. For those who have not a hardwood floor and cannot afford oilcloth, there is always the pot of paint. I feel sorry for the woman who is not artist enough to appreciate the renovating powers of a pot of paint.

There is much talk of "woman's rights,"—one of the rights of woman is to look after her own health. No woman has a right to work so hard with her hands that she is too tired to use her mind, and is therefore no companion for her husband and family. Mrs. Kinney last year took a whole chapter from the book of Proverbs as the outline of her paper. There was one verse impressed me very much, namely, "She looketh well to the ways of her household," not only her house but those who dwell therein.

I am sure if we only carry home half the good things we have heard, they will be a great benefit to us personally and to our Institutes as well.

CARE OF THE SICK AND FIRST AID TO THE INJURED.

BY ANNIE ROSS, M.D., MACDONALD INSTITUTE, GUELPH.

The shadow of sickness will some day darken each home, and exceptional cases will arise in which whatever is done must be done at once without waiting for the arrival of professional aid. Although love is undoubtedly the greatest thing in the home, even love is helpless at such times unless accompanied by knowledge and skill. Let your courage rise with occasion, for on your prompt action a life may depend.

Here are a few suggestions that apply to cases of emergency in general:

(1) Keep calm and cool; if you allow yourself to become excited you will forget all you already know.

(2) Remember the simplest things are often the most useful.

(3) Doing too much is more harmful than doing too little.

(4) Get rid of all persons whom you cannot make useful.

(5) Nature is a wonderful healer, if not interfered with.

(6) Keep as a sacred confidence anything that is revealed to you at the bedside of the sick.

"Beside the unveiled mysteries of life and death go stand,
With guarded lips and reverent eyes, and pure of heart and hand."

We will now speak of what should be done in some of the more frequent emergencies.

FAINING. This is a temporary unconsciousness caused by an insufficient supply of blood to the brain.

Treatment. (1) Make it easier for the heart to pump the blood back to the brain by having the patient lie flat with the head lowered. Do not support the head by placing your arm or a pillow underneath. (2) Loosen any tight clothing. (3) Allow plenty of fresh air to get to the patient.

In an ordinary fainting fit this is all that is required to be done. The patient will soon recover. Sips of cold water is the best stimulant. Be cautious in forcing such stimulants as brandy or ammonia upon an unconscious patient, as there is danger of strangling or choking.

CONVULSIONS. These seizures are not uncommon among children. A series of convulsions which follow one another is a serious indication. It may console you to know that the child is not conscious of pain during the agonizing spasm of a convulsion. He suffers no more than if he were asleep. Very little can be done during the few moments the fit lasts. Causes which produce convulsions in children are numerous. Undigested and indigestible food may be responsible for the disorder; difficulty in teething is another cause. The onset of such diseases as scarlet fever and pneumonia and measles are often marked by convulsions; or a nervous shock may send a child into fits. Then there are the convulsions or fits of epilepsy.

Treatment. (1) Place the child in a comfortable position where it will not injure itself. (2) Insert a folded towel between the teeth to prevent it biting its tongue. (3) Loosen any tight clothing. (4) A warm bath will do no harm.

HYSTERICAL FITS may simulate a faint or a convulsion, but the patient is not really unconscious, and is not in danger of injuring herself. Any attempt to open the eyelids will usually be resisted.

Treatment. (1) Allow the patient to hear no expression of sympathy. (2) Leave her alone. (3) The mere suggestion of an unpleasant remedy will aid in the recovery.

CROUP. This is perhaps one of the most fruitful causes of alarm to the young mother. Children do not know, and so make no attempt to expectorate the secretions that accumulate in the throat, so the air passages become plugged up with mucus, which is the cause of the spasms of alternate coughing and choking.

Treatment. (1) Raise the head and shoulders and prop the little one up in bed with pillows. (2) Have a dish of water boiling in the room to keep the air moist and so make breathing less difficult. (3) Induce the child to vomit. (Drinks of warm water with a little mustard in the water will serve as an emetic). (4) If the spasm is so violent that choking is threatened, do not hesitate to insert your finger and clear the throat of mucus. The irritation of the finger coming in contact with the back of the throat may also produce the desired vomiting.

SPRAINS. The wrist and ankle are more exposed to sprain than the other joints. You are too familiar with the causes and effects of sprains already, so we will refer to the treatment.

Treatment. (1) Rest the joint—complete rest. (2) Elevate the part, in order to discourage an oversupply of blood to the injured tissues. (3) Bathe the sprained part in hot water. (4) When the inflammation subsides, protect and strengthen the joint by splints and bandages. (5) Afterwards massage is useful.

These are but a few of the many cases of emergency which our time enables us to mention.

Dr. Ross was assisted by a number of the Macdonald Institute students, who gave practical demonstrations of bandaging various parts of the body, and of the making of a bed for a patient; also the easiest and best way to wash a patient, and change the clothing and bedding.

As the hour was somewhat late a large number of delegates had to leave the meeting, to catch their trains. Those who remained were very much interested in the practical work which followed the address.

FIVE MINUTE REPORTS OF INSTITUTES, PRESENTED BY DELEGATES.

AMHERST ISLAND.

We have 55 members for 1904.

No branches have been organized since the convention last year.

This year we have sold old magazines and pamphlets that have been read by our members, and by so doing we can get new ones.

There are no branches in our district.

The papers given at the meetings and the library are the most interesting features of our Institute.

As we live on an island we cannot extend our membership very much. This year the attendance at the monthly meetings has been small on account of sickness and the scarcity of help in our homes.

I think we as islanders will be able to hold our own, and I think more are awakening to the fact that as Institute members we enjoy meeting together and are benefited thereby.

You will see by our President's report of last year that each second year member receives a pin and badge. The lady speakers who have been at Amherst Island since the badges were introduced have each received one as a token of membership, respect and good wishes.

Mrs. S. K. TUGWELL, Secretary.

NORTH BRANT.

The North Brant Women's Institute has had a very successful year, and has now about 105 members.

No new branches have been formed this year. The Cainsville and Onondaga branches have ceased to hold meetings.

Our only sources of revenue as yet have been the membership fees and the Government grant.

Quite a number of good papers have been given this year, and our members are all helping in this respect wonderfully well.

The Question Box is one of our best and most helpful features and brings out good discussions. As soon as the questions are gathered by the Secretary, they are read aloud so that all present may hear them and be prepared to discuss them. They are then handed to the Superintendent of the Question Box, who takes them home and prepares herself to answer them correctly and thoroughly at the next meeting. Before answering them she generally calls on several ladies for their opinions, and by this means keeps a discussion going.

Miss Mary Bell, of St. George, gave us a cooking demonstration in July, which was much enjoyed. A very interesting meeting was held in November, when six young ladies gave a demonstration in dressmaking. The first speaker gave a talk on "What to Wear," and also showed how to measure for the Butterick patterns. The second speaker told how to cut and fit a skirt lining correctly. The third told how to finish up the skirt, trim it, etc. The fourth showed how to cut and fit a waist. The fifth took a shirt-waist and told how to make it, while the sixth demonstrated the new sleeve. This was our most ambitious effort and proved very successful.

The Moyle and Tranquility branch held special meetings in July and August. In July Mrs. J. E. Brethour and Mrs. Andrew Kinney spoke, and Miss Bell gave a demonstration. The district officers were invited, and an excellent tea was served on the lawn. In August their meeting was held in the evening and gentlemen were invited. Miss Blanche Maddock gave an address, as did also Mrs. Kinney, who, by the way, is one of our own members. Refreshments were served, and about two hundred were present.

Our main Institute takes eight magazines and the branch takes three. Some of their members loan their private magazines to the Institute.

We arrange programmes for months in advance, and have them printed and distributed as early as we can, and find the system very satisfactory.

We have had an average attendance this year of nearly forty, and a number of ladies have signified their intention of joining with us at the beginning of the year.

The outlook for the continued success of our Institute is very bright, as the officers and members are all willing to do anything they can to make the meetings a success.

ETHEL CLEMONS, Secretary.

CENTRE BRUCE.

For 1904 we have 62 paid-up members.

No branches have been organized in our district since the convention last year.

The branches which have not held regular monthly meetings are Chesley, Glamis, Ripley, and Bervie.

The members of the main Institute turn out well to demonstrations by lady delegates and enjoy them. Our Annual Report is much appreciated,

as are also the Hand Book and Bulletins. A good deal of attention is also given to the magazine library. Social intercourse is a most pleasing feature of the regular meetings.

The officers and members of Centre Bruce Institute are busy women, and have little time to do canvassing in country places. It is hard to get them into the work, especially in an official capacity.

It is suggested that the financial and membership year should end at the same time, as the present plan causes much confusion.

Perhaps the greatest hindrance to the work in our district is indifference on the part of the women.

The feeling is abroad that Women's Institutes are a power for good. Sir William Macdonald's splendid gift has become generally known and appreciated. We believe that with careful management the Institutes will grow and accomplish much for those who are striving after better methods in home-making.

MRS. R. CONN, Secretary.

SOUTH BRUCE.

The number of members for 1904 is 88.

No new branches have been formed since the last convention.

Cargill and Mildmay branches have not been holding monthly meetings.

The Government and municipal grants are our only sources of revenue, except membership fees.

The most interesting meetings we have held have been those at which we have a programme arranged so that all present may take some part, such as a meeting devoted to "Nature Study" and Events of the Day."

The ladies of the towns have the idea that the Institute is solely for farmers' wives and daughters; hence they do not care to join. Distance, pressure of work in summer and often bad roads in winter, are conditions which tend to keep many women at home, who would otherwise be present at our monthly meetings.

The outlook for South Bruce is fairly good. The branches are so far apart it is difficult to maintain an interest.

BESSIE TOLTON, Secretary.

WEST BRUCE.

The number of members for 1904 is 88, a slight decrease from last year, which is to be accounted for in a measure by the partial failure of the winter meetings of the Farmers' Institute. We generally secure a number of members at the evening meetings of the Farmers' Institute.

A branch was formed at Allenford in June, when Miss Agnes Smith and Mrs. A. E. Dunbrack visited our district, but it has not made much progress. The officers who were appointed do not seem to have taken a great deal of interest in the work. I believe Allenford has not been holding monthly meetings.

No other ways have been adopted to secure funds except membership fees, Government and municipal grants.

I think the most interesting features of the meetings are in connection with the discussions on the specimen programmes, given in the Hand Book. Each member is expected to give either verbally or in writing her views on the subject, or to select some reading bearing on the subject. The announcement of the subject for discussion is made one month ahead, so that there may be time for preparation.

The greatest hindrances seem to be the indifference of some, and the mistaken idea that the subjects under discussion concern only those on the farm. Some of the townspeople seem to think they would be lowering themselves to discuss these things. Another hindrance is the difficulty of getting to the places of meeting during the busy season.

I think the outlook is promising, as the aims and objects of the Institute are becoming better understood. I believe these conventions will help to correct the erroneous impressions I have mentioned, and would strongly recommend that each main and branch Institute send at least one delegate, as it will broaden their ideas and give them a better insight into the work. It will also show them how wide-spread the work is, and reveal to them that it is not their "little corner" alone that is working. I hope that the work may soon cover the entire Province.

MRS. D. MCTAVISH, President.

DUFFERIN.

We have in our district 111 members for 1904.

On October 7th our Secretary and Vice-President, also a few of the directors, drove out about ten miles to Camilla and organized a branch Institute. We already had five members, and ten ladies joined, thus making a good working membership to start with.

All our branches are doing well except Relessey. This really ought to be one of the best branches in the riding, but it has lacked an extra effort on the part of some enthusiastic officer to help the work along.

In addition to the grants and membership fees, we had a share in the Farmers' Institute excursion to Guelph in June. Our share of the proceeds was \$38. We are also preparing to hold an At Home in the near future.

The discussions are the most interesting features of our meetings. We choose the topics a month ahead. The only complaint we have heard is that the meetings close too soon, and that the discussions are too short.

One of the great hindrances is the failure of many of our women to grasp the right idea of the work of the Institute. Some people think that when a woman joins the Institute she is setting herself up as a teacher, or just a little bit above her fellows who are not members. Now, those of us who know the aims and objects of the Institute know that this is all wrong. Another hindrance with us has been the difficulty in getting officers who were successful in choosing the subjects and planning for the meetings.

Another hindrance I might mention is the lack of energy in securing good journals for our members. I find the magazines one of the greatest helps. We subscribe for the "Woman's Home Companion," "Canadian Good Housekeeping," "Modern Priscilla," "Farming World," and the "Ideal Cook Book," the latter having very fine premiums. We pay a percentage for each member and let them choose their own journal, they paying the difference. It rarely exceeds thirty cents on a one dollar journal.

The outlook is very encouraging; unity and harmony exist among members, and with the officers; and our standard is "Onward and Higher."

MRS. J. J. HALL, President.

MRS. R. H. GALBRAITH, Secretary.

WEST DURHAM.

We have held monthly meetings at Bowmanville, Solina and Hampton during the year, and have now 53 members.

No new branches have been formed during the year.

Funds have been raised by membership fees, and grants.

The most interesting features of our meetings are the friendly intercourse among members and the exchange of timely and helpful suggestions for housekeeping.

Our greatest hindrance is the lack of good programmes to induce ladies to come out to our meetings.

The outlook is fairly good. We have plenty of money for all expenses. A number of copies of "Good Housekeeping" and "Ladies World" have been ordered for distribution among our members. Hampton branch reports good meetings and renewed interest since the distribution of more literature.

West Durham sends greetings to all other Institutes.

MRS. THOS. POWER, President.

E. E. HAYCRAFT, Secretary.

EAST ELGIN.

We have 107 members for 1904.

Four new branches have been formed since last convention, viz.: Springfield, Bayham, Vienna, Sparta.

Bayham and Vienna have not held regular monthly meetings.

Ways adopted to secure funds other than membership fees and grants: We took charge of a lunch booth at our Elgin fair, and realized fifty dollars.

Demonstrations in cooking have proven the most interesting features of our meetings. By that we mean the feature which will ensure the largest attendance. Our last meeting was a social one, and over one hundred were present. Sixty ladies joined as members for 1905. A table was set and beautifully decorated, but the refreshments were passed around. A musical programme was also provided.

We really do not find any hindrances in extending the work.

The outlook is bright.

MRS. I. R. PRITCHARD, Secretary.

CENTRE GREY.

We have a membership of 176 for 1904.

One branch has been formed since the last convention, viz.: Ravenna, which is now one of our most progressive.

The Vandeleur branch has not held any meetings since the annual meeting in June, but expect to do so this month.

The Kimberley branch made \$8.98 by giving an oyster supper, the admission fee being twenty-five cents. In October the same branch held a box social, by which they cleared \$16.40. I think it very probable that other branches will adopt some such means during the winter to increase their funds.

The addresses, readings, and discussions are the most interesting features; and I might also mention the magazines and books, which are much appreciated. Not the least interesting feature of the Institute is the genial friendliness, which arises from meeting frequently and getting better acquainted with each other and with each other's methods of housekeeping.

Among the hindrances in extending the work I might mention irregular attendance at monthly meetings. Some "forget it was the day of the meeting until it was too late;" others "have some work to do which it was impossible to leave;" and still others would have the weather and roads perfect before they would venture out. We notice that other ladies, who

have just as much or more to attend to, get out to the meetings regularly no matter what the weather is like. I think regular attendance at the meetings keeps up the interest better than any other one thing. Another hindrance is the neglect of carefully studying the Rules and Regulations. If the business were properly done it would save a lot of unnecessary trouble among the members and officers. We are also hampered by the shortage of funds. The Farmers' Institute grant of ten dollars all goes towards defraying the expenses of the lady delegates in summer. This just leaves the district the Legislative and municipal grants of ten dollars each, to meet all other expenses, procure magazines for the branches (six in all) and defray the expenses of a delegate to the Guelph Convention. Last year we could not afford to send a delegate, and this year there will not be much of a surplus left when the expenses are met.

The outlook, on the whole, is very promising. New members are being enrolled each month, and we find the quality of the papers improving and the discussions becoming more interesting all the time.

MRS. C. E. MYLES, SECRETARY.

NORTH GREY.

We are pleased to report a membership of 200 for 1904.

Owen Sound branch was organized since the last convention.

Our branches, thinking it too frequent to meet monthly, have been meeting quarterly or each alternate month.

As yet we have only two branches that have adopted any other method of securing funds, besides membership fees and grants. Kemble had an entertainment, managed as follows: Members were admitted free, new members were admitted for twenty-five cents; the general public for fifteen cents; thus giving the old and new members the same advantage. Desboro had a social when the delegates were there.

I may safely say that the most interesting features at our meetings are the lively discussions.

Hindrances: lack of interest and the need of an official organ, or something of the kind, so that we might know how successful Institutes are managed. We would suggest the publication of a monthly leaflet of the columns of one of our agricultural papers.

The outlook is fairly good. We are hoping for good results during the coming year.

MRS. B. J. LONG, Secretary.

SOUTH GREY.

We have 88 members for 1904.

No branches have been formed since the last convention.

Elmwood and Holstein have not held regular monthly meetings.

We have no ways other than membership fees and grants to increase our funds.

Probably the discussions are the most interesting feature.

In some parts of our riding the members are very widely scattered, which is rather a hindrance in extending the work.

The outlook is very promising.

KATE L. DIXON, Secretary.

HALDIMAND.

Our membership for 1904 is 115.

When Mrs. McTavish and Miss Fuller were with us in June we organized a branch at Sweet's Corners, but the Secretary informs me that the ladies do not show enough interest to encourage them to go on with the work.

Canfield, Selkirk and York hold regular monthly meetings.

Grants and membership fees are our only sources of revenue.

We have the roll call in connection with our Institute, and find it very interesting and instructive. It proves to be a good way to get quiet members to speak. Our members are also interested in the Question Drawer, but they are also interested in a well prepared paper and in the discussions which follow.

Indifference is our greatest hindrance, but the outlook is bright, and we find many more women becoming interested in the Institute and its work.

B. E. STEWART, Secretary.

HALTON.

We reported last year that the outlook for this year was very *promising*, and our prophecy has been fulfilled. We have this year a membership of 535, and it is with pardonable pride that we still hold our position as the "Banner Institute" of the Province.

During the year we have organized two new branches in Halton: Appleby and Brookville. Appleby branch has flourished from the beginning, but Brookville branch is not now holding monthly meetings. Most of the members had to drive too far and felt it was too much effort.

In addition to the membership fees and Government grant, we receive two other grants, viz.: \$10 from the Farmers' Institute, and this year the county council raised their grant to \$15. We have not adopted any other means of securing funds. We do not emphasize the need of money, for we do not want our members to get the idea that this is a money-making scheme. But our greatest hindrance is lack of money. However, this movement has been so cordially received throughout our county that our members do much to make up for that lack.

At our meetings one of the most interesting features is the interest all the members take in the subjects discussed, and their willingness to assist in the meetings. We discuss very *practical* subjects, and something appropriate to the season of the meeting. We have our programme arranged in every detail before going to the meeting and we rarely have a disappointment.

We have several ladies throughout the county who have given very successful demonstrations in cooking, which adds much to the interest.

Our outlook for next year is most encouraging. We have been successful in securing enthusiastic, capable officers and directors in all our branches who will cheerfully uphold our high standard, and keep Halton to the front for 1905.

MRS. S. R. BEWS, Secretary.

EAST HASTINGS.

Our Institute was organized at Read in 1901 by Miss Blanche Maddock. From a small beginning the membership gradually increased, new branches being formed in different parts of the riding. We have 200 members for 1904.

We held six meetings in June, with a good attendance throughout the district. The addresses given by the delegates at these meetings on "The Properties of Food," "Sanitation," "Home Life," should make the women of our county better housekeepers and home makers. If we were all educated in the true sense of home-making, the monotony and discontent of many a home might be dispelled.

The benefits derived from the Institute are numerous. By meeting together we create a friendliness which brightens our lives; we become more desirous of home study and mutual improvement. The literature sent out by the Department is very instructive. Several of our members have given excellent papers. Those who prepare the papers reap an additional benefit, as in the effort the mind is broadened, dormant intellects are developed, more reading is done, and the information is more deeply impressed on the mind.

I think the greatest hindrance to the work is the lack of willing workers to make the monthly meetings interesting. It is difficult to secure zealous enthusiastic officers in each branch, and thus the greater part of the work falls on the district executive. Another hindrance is the misconception which many have of the nature of the work and the benefits to be derived by becoming a member of the Institute. To retain an interest in each branch it is necessary to have the delegates hold meetings frequently, but our funds are not sufficient to pay the expenses of so many meetings. It seems as though some method must be devised to procure more assistance from the Government, to help us in the work we have undertaken.

We find that June is the most suitable month in which to hold public meetings.

MRS. CURRIE ENGLISH, Secretary.

NORTH HASTINGS.

We have a membership of 62.

No new branches have been formed during the year, but Queensboro branch was re-organized at the time of the summer meetings.

The branches not now holding monthly meetings are Ivanhoe and Queensboro, although the latter holds occasional meetings.

We have no money except that received as grants and membership fees.

The most interesting features of the meetings are : (1) The interest shown in discussing subjects upon which addresses have been given; (2) The social feeling that exists among members.

One great hindrance in extending the work of the Institute is too great distance between points. Our meetings are confined entirely to the country, and many who might become members are not able to attend.

The outlook is good. We are looking forward to making our meetings more interesting in future.

MRS. W. MEIKLEJOHN, President.

MRS. JAS. McCOMB, Secretary.

EAST HURON.

The number of members for 1904 is 176.

One new branch was formed since last convention.

Our branches are all holding monthly meetings.

Grants and membership fees are the only moneys we receive.

The benefits of the Institute are: (1) Greater sociability; (2) Freedom in discussion; (3) Willingness to prepare papers.

Hindrances: Inability on the part of the officers to interest others in their own improvement.

The outlook is favorable.

MRS. JAMES ARMSTRONG, Secretary.

WEST HURON.

Our membership for 1904 is 109.

Benmiller and Auburn are not now holding monthly meetings.

We have not adopted any means of procuring funds other than grants and membership fees.

The most interesting features at our meetings are the social opportunities and the cooking demonstrations.

We have not met with any hindrances in extending the work.

The outlook is bright, and we are hoping to have a prosperous year.

MRS. COLIN CAMPBELL, Secretary.

WEST KENT.

The number of members is 88.

No new branches formed since the last convention.

Port Alma is not now holding monthly meetings.

To augment our funds we have adopted the following methods, viz.:

(a) Buying measuring cups (glass) and selling them at a profit; (b) Procuring a council grant in addition to the Farmers' Institute grant.

The interesting feature of our Institute are the talks or addresses by visiting delegates, the Question Box, and lunch baskets.

We find some difficulty in getting our members to consent to take a topic. Some complain that their husbands and brothers get so much more literature for the same membership fee. A small number will attend almost every Institute meeting, yet cannot be persuaded to join us; apparently being bent on securing all the information possible without spending their twenty-five cents.

The outlook is hopeful. The officers and directors are deeply interested in the Institute work and see possibilities ahead. Our purpose is to make the Institute an influence for good in our homes and home life.

S. KENNEDY, Secretary.

LINCOLN.

The membership for 1904 is 89.

Smithville branch was formed since the last convention, and has been holding regular monthly meetings.

The most interesting feature of the meetings is the discussion.

One hindrance to the progress of our Institute is that the officers do not do enough personal work; we depend too much on our meetings to bring in new members, and do not canvass. My experience is that the officers are selected from among the most busy women, and they have too many duties devolving upon them to do their duty to the Institute work. There is a lack of experience on the part of members; indifference on the part of some; and unwillingness on the part of others. The want of confidence to speak in public is one of our difficulties; not a lack of intelligence, but extreme diffidence. It seems hard to convince town women that the Institute would be a benefit to them as well as to farmers' wives and daughters.

Our meetings have been held at private houses and the attendance has been good. We have an opportunity of meeting our neighbors and friends, which would not otherwise be possible. The meetings have done us good in many ways, and much good seed has been sown for future reaping.

MRS. M. CULP, Vice-President.

NORTH MIDDLESEX.

North Middlesex Institute was organized in July, 1903, at Coldstream. This year we have a membership of 160.

New branches were formed in January at Beechwood, Ailsa Craig and Parkhill.

At the present time all of our branches are holding regular monthly meetings. Only one branch discontinued meetings during the summer months.

Our Farmers' Institute granted us \$25.

Some of the interesting features of our meetings have been the reading of papers written by members, discussions, practical demonstrations by members and others, also the help we have received from magazines procured for the Institute.

Our chief hindrance has been the lack of opportunity to go the distance often necessary to attend meetings, but this is being gradually overcome by the increased interest being taken in the work.

MABEL H. ZAVITZ, Secretary.

WEST MIDDLESEX.

We have 64 members for 1904.

The Mount Brydges branch is the only new one formed since the last convention.

The Appin branch is not now holding monthly meetings.

Our funds have been made up of membership fees, Government grant, and county council grant. The Farmers' Institute had no money in the treasury and could not help us.

The most interesting feature at the meetings is the discussion after a paper has been read, and when each lady present gives her experience in the matter under discussion. In one of our branches each member is supposed to bring something of interest to the meeting; it may be a new recipe, or something she has read in a paper or magazine which she thinks will be interesting and instructive to other members.

The great hindrance we find in extending the work is the carelessness in attending the meetings. Our main Institute is in Strathroy, a town, and there seems to be a great deal to interfere with our meetings. Then, too, many of our members seem to be satisfied to merely receive the literature from the Department, and do not seem to care about attending meetings.

The outlook is promising, because our financial position will enable us to make the meetings more interesting than formerly. For the first time we shall be able to subscribe for some magazines that will be of interest to the members. We also intend to buy a few books.

MAY E. HEALY, Secretary.

MONCK.

We have a membership of 77 for 1904.

No new branches have been formed within the year.

Grants and membership fees constitute our sources of revenue.

The most interesting features of our meetings are the exchanging of ideas, sociability, and doing away with all formality.

The hindrances are the non-attendance of members at the meetings.

The outlook is favorable.

MRS. A. B. McLEAN, President.

SOUTH MUSKOKA.

South Muskoka has now 58 members.

Two new branches have been formed since last convention, viz.: Brackenrig and Macaulay.

Brackenrig holds quarterly meetings.

We have not adopted any way to add to our funds, but have made the proposition of giving entertainments during the winter months, and picnics with the auctioning of election cake for the summer months.

The most interesting features have been the exchanging of tried recipes, both for cooking and medical purposes.

The hindrances are the great distances between members, and the depth of snow in winter.

Everything tends to the growth of South Muskoka Women's Institute.

ANNIE CAMPBELL, Secretary.

NORTH NORFOLK.

Our membership for 1904 is 55.

No branches have been formed since last convention.

Simcoe branch has now become the main Institute instead of Waterford; the people of the latter place having given up the work.

Papers and discussions are our most interesting features.

Hindrances: Indifference; so many not caring to have anything to do with the Institute.

The outlook is bright at present, and we hope to have a much larger membership next year.

MRS. SAFFORD KITCHEN, Secretary.

EAST NORTHUMBERLAND.

Our Institute, organized in 1901 by Mr. G. C. Creelman, has been gradually increasing, until now we have 108 members.

We hold regular monthly meetings, with an average attendance of fifty-eight. We feel encouraged when we realize the distance many members have to drive to attend these meetings. But the reward has been well worth the effort. In the discussion mind is brought in contact with mind, and the members go to their homes refreshed, and better able to cope with the burdens of home life.

The most interesting feature of our meetings seems to be the papers prepared and read by our members, and the discussions following them. We have experienced some difficulty, however, in getting the more timid and retiring ones to take part in these discussions. But owing to the indefatigable efforts of our President even these are made to feel that they have a part in this work, and in the desire to help, this shyness is forgotten. Thus the influence extends, and for the future this Institute has a bright prospect.

ISABEL T. LITTLE, Secretary.

WEST NORTHUMBERLAND.

Our membership for 1904 is 78.

There are no branch Institutes in our district.

Our funds are derived from membership fees and grants.

The papers and discussions are the most interesting features of our meetings. In the discussions the timid woman is enabled to overcome her

timidity and let her voice be heard in public.

One of the greatest hindrances is the distance some of our members have to come to attend meetings. Irregular attendance always means lack of interest.

The outlook for the future is fair.

MRS. J. J. HINMAN, President.

NORTH ONTARIO.

North Ontario Institute has 62 members.

No branches have been formed since the last convention.

We have not adopted any means to increase our funds, other than grants and fees.

Sociability is perhaps the most interesting feature of our meetings.

Lack of literature is the greatest hindrance in extending the work.

The outlook is good.

MRS. WALTER LAPP, Delegate.

SOUTH OXFORD.

Our membership for 1904 is 243.

We have five branch Institutes, but they have not held regular monthly meetings. However, there is only one which is not working.

Aside from the grants and fees we have no means of raising money.

We find the papers prepared by our members, relating to the different branches of our work, to be very helpful and the discussions which follow are always an interesting feature of the meetings. The Question Box is also an important factor.

Although at some points in our territory it is difficult to get papers prepared, we have to a great extent overcome the difficulty. The members are now taking a deep interest in the work, and are willing to give what information they can, as well as receive what others study so diligently to prepare.

We consider our future to be full of work and most encouraging.

MRS. D. H. KELLY, Secretary.

PEEL.

I am pleased to be able to give a good report of the work in Peel county. Each year since the formation of our Institute there has been a growing interest in the work, which is shown by an increased membership. We have now a membership of 201.

There are four branch Institutes in our county, three of them being formed this year. Two of them hold regular monthly meetings.

Brampton branch had a teacher for two weeks, giving lessons in cooking. One very interesting lesson was on the boning of a chicken. The Halton ladies gave us a programme one month. The Grange branch has found the roll call an interesting feature; each member responding with a helpful suggestion or recipe.

We feel that in our county the Institute work is only in its infancy, and that great good will yet be accomplished. The greatest interest seems to be in practical demonstrations.

We are hindered somewhat by the want of funds. We find that many ladies do not join because they come to the meetings without their purses.

As a rule men have their purses or money with them. Why have not women?

Considering all things we have no reason to be discouraged with the work during the past year, and look forward to more successful meetings and to an increased membership for the year 1905.

MRS. W. W. WILKINSON, President.

NORTH PERTH.

The number of members is 62.

No new branches formed.

Shakespeare and Monkton are not holding regular monthly meetings.

We have had entertainments at which we charged a small fee, so as to increase our funds.

Cooking demonstrations are the most interesting features.

Hindrances: Difficulty in getting the members to take a leading part.

Outlook: Very bright.

E. GOODALE, Secretary.

WEST PETERBORO.

Our membership is 66.

We have no branch Institutes in West Peterboro.

In addition to our grants from the Farmers' Institute, county council and Government, we received half the proceeds of an entertainment given by the Farmers' Institute. Our Institute prepared the musical part of the programme.

Perhaps the addresses and discussions are the most interesting. This is a hard question to decide, for all our meetings are interesting.

We do not find any hindrances in our work at Lakefield, but at points where we would like to organize branches we find a lack of interest.

The outlook is bright.

MRS. G. FITZGERALD, Secretary.

SOUTH SIMCOE.

Our membership for 1904 is 54.

We have branches at Bond Head, Thornton and Churchill.

Our library consists of twelve books and magazines, and we also take some papers.

Last year we spent our money on sending a delegate to Guelph, secretary's salary, lecturers' expenses, postage and incidental expenses.

Hindrances are lack of interest and difficulty in getting members to give papers, also to discuss them when they are given.

We had not many meetings in summer, as our President was away, and the members seemed too busy to prepare papers and attend.

We had some good papers and discussions during the winter months, and I think our members have been benefited by the ideas and information received.

Our outlook is bright, and we are looking forward to a profitable year.

MRS. ORLANDO LEWIS, Secretary.

WEST SIMCOE.

Our membership is 159.

New branches, two.

All branches hold monthly meetings.

Most interesting features: Ready, animated discussion; willingness to give and receive information on all matters brought up at the meeting.

Hindrances: Indifference from want of knowledge of the benefits to be derived from the meetings; inclemency of the weather during the winter months.

Outlook: Encouraging.

MRS. F. E. WEBSTER, President.

MRS. E. JAMIESON, Secretary.

UNION.

Our membership for 1904 is 59.

No new branches have been formed since last convention.

We hold our meetings quarterly.

During the year we held an auction sale of last year's magazines and periodicals, the receipts of which somewhat increased our funds.

Our meetings are made very interesting by the papers and addresses given. We aim at having variety in the subjects dealt with, and also having the subjects practical, so that from the treatment and discussion of them the members may derive some benefit which they may use in their homes in daily life.

One of the difficulties we meet in getting members to enter freely into the discussions of papers or addresses given at the meetings. We do not think the reason of this is lack of interest as much as timidity on the part of members to express their opinions and experiences. Another difficulty we find is being unable to form branch Institutes.

The outlook is bright and encouraging.

EVA R. MOONEY, Secretary.

EAST VICTORIA.

Our membership for 1904 is 74.

No new branches have been formed this year.

Dunsford is the only branch that does not hold monthly meetings.

The discussions are the most interesting features of our meetings.

Our greatest hindrance in extending the work is the indifference of those who most need the Institute help.

The outlook for 1905 is promising. In many instances we are winning the girls as well as the mothers.

M. M. CULLIS, Secretary.

NORTH WATERLOO.

Our membership is 128.

No new branches have been formed, and we regret to report that the Waterloo branch has ceased to hold meetings.

At the joint meeting of the Farmers' and Women's Institutes at Wellesley, an admission fee of fifteen cents was charged non-members. Many were willing to pay the extra ten cents and join the Institute. At the January meeting in Winterbourne, when the Farmers' Institute delegates

were present, we invited the gentlemen to tea at the close of the afternoon meetings. In this way a large number from a distance were enabled to remain to the joint meeting in the evening. We were more than repaid by the gratitude expressed.

Our annual meeting, held at Wellesley, was quite a success. Misses Shepherd and Carter were present, and their addresses and demonstrations were much appreciated. The Farmers' Institute held their annual meeting at the same time, and at the close of the afternoon session we held a picnic on the grounds, being favored with music by the Wellesley band.

We have had very helpful papers and discussions by the members. Mrs. Brown, our President, gave us a delightful account of her trip to the North-West during the summer. The teaching of fancy work for Christmas gifts has been an interesting feature of our work.

One of the greatest hindrances is the distance members have to travel to attend meetings.

The outlook is bright. Many of the ladies seem to be more interested than ever, and are anxious to do what they can to help in this grand work.

JESSIE McDUGAL, Secretary.

SOUTH WATERLOO.

The number of members of South Waterloo Women's Institute has been increased almost daily, until now we have 292 on our roll.

We have not formed any branches yet, but expect to do so during the coming summer series of meetings.

Our membership fees and grants have been sufficient to meet the financial requirements of the Institute. A prize of three dollars each to fall fairs, was given in prizes for baking.

Our meetings have been all well attended and great interest is manifested in them in town, village and country alike.

We have met with few discouragements or hindrances, the lack of literature being the only drawback.

Our annual picnic, which we hold just after the harvest, is much enjoyed. The attendance last September was two hundred.

The outlook for the South Waterloo Women's Institute is bright and encouraging.

MRS. WILL ELLIOTT, Secretary.

WELLAND.

Our Institute has a membership of 54 for 1904.

Since the last convention two branches have been formed; one at Stevensville and one at Sherkston.

All the branches are holding monthly meetings.

We have received no funds except as fees and grants.

The members find the roll call (to which each member responds with a recipe, etc.) very interesting; also the discussion on the different papers.

The one great hindrance which we find in extending the work is in getting the women to attend meetings. After they have been to two or three meetings they become more interested.

The outlook for our Institute is bright; much more so than it was a year ago. There seems to be much more interest taken in it by the ladies.

MYRTLE CAUTHARD, Secretary.

CENTRE WELLINGTON.

The Centre Wellington Women's Institute was organized in Erin, June 22nd, 1904, by Mrs. Jean Joy, of Toronto, with a membership of eleven, including the officers. The membership is now 42.

We have no branch Institutes but are holding monthly meetings at Erin and Hillsburg alternately.

No funds have been raised except the fees and a grant of ten dollars from the Farmers' Institute.

We have no library, but have subscribed for "Canadian Good House-keeping" and "The Home Science Magazine."

Since organization five meetings have been held, one in the hall at Erin, and the others in private homes.

The greatest hindrance met with has been a lack of funds; also that the work is new in the district, and the majority do not fully realize the benefit to be derived from these meetings.

We are pleased with the success with which we have met thus far, and the prospect for 1905 is even better.

L. McMILLAN, Secretary.

SOUTH WELLINGTON.

We have now about 30 members on the roll.

All the branches are now holding monthly meetings, excepting Marden. We hope to re-organize there at the time of the summer meetings.

The county council granted us \$25; the municipal council \$10; and the Farmers' Institute \$10.

The most interesting feature of the meetings is the sociability of the members, and the learning of the different ways of doing things, all of which has proven very helpful to our members.

The hindrance to our work is the distance many members have to come to attend meetings, and the lack of time on the part of the busy housewife, owing to the scarcity of help in the home.

The outlook is very bright and points to a successful year.

ALICE WHITELAW, Secretary.

WEST WELLINGTON.

West Wellington membership is now 171.

New branches have been formed at Lebanon and Moorefield.

Palmerston, Glenallan, and Lebanon have not been holding regular monthly meetings.

Our funds have been increased by receiving part of the proceeds of the Farmers' Institute excursion to the Ontario Agricultural College, Guelph.

The most interesting features are the demonstrations and papers given by our own members, and the discussions following.

The hindrances are, scarcity of literature, indifference, and lack of time.

The outlook is bright and promising.

MRS. S. M. CLEMENS, Secretary.

NORTH WENTWORTH.

The membership for 1904 is 104.

No new branches were formed during the year.

We find it better not to hold meetings every month, and so have held them every two months.

Grants and fees are our only sources of income.

The social side of our meetings is very good, and the members all agree that they have never come to an Institute meeting but they return to their homes much encouraged, and try to make those in their homes happier, healthier and more comfortable.

The greatest hindrance in the work is that we have few leaders. The speaking is left to three or four. But we hope when we get more ladies interested, and when they have a better knowledge of the work, this hindrance will be overcome.

Mrs. Wm. Wood, Secretary.

SOUTH WENTWORTH.

The number of members for 1904 is 240.

Glanford branch was formed since the last convention.

All our branches are holding monthly meetings.

Our funds are made up by grants and membership fees.

Practical demonstrations in cooking are of great interest to our members. We are now turning our attention particularly to discussions on different topics: the one on "Apples" for September, suggested by our Superintendent, eliciting great interest.

There remains only one district in which no branch has been established, the principal hindrance being the great difference in the social standing of the people of the community; in fact, distinct cliques exist. One of the branch Institutes writes that the want of funds is a great hindrance, as the members are asking to hear public speakers.

The outlook is brighter than ever. The Institute is now recognized as being firmly established, and its influence is becoming more powerful each year. In fact, as one member expressed it when tempted to stay away from one of the monthly meetings on account of being too tired to go, "I realized that the privilege was too great to be cast aside, so I braced up and went." Moreover, the women are awakening to the fact that the Institute is solving the question of growth. Hitherto they felt their limitations. Now the limitations are being removed, and we look into the boundless future, which is full of glowing possibilities.

Mrs. Erland Lee, President.

EAST YORK.

The number of members in East York for 1904 is 109.

No new branches have been formed since last year.

In addition to grants and fees we have added to our funds by receiving part of the proceeds of the Farmers' Institute excursion to Guelph.

Most interesting features: Good subjects well discussed.

Hindrances: Lack of time on the part of the executive. Too much left with officers. Lack of interest, at times, among members.

Outlook: More thought among the members, and more originality if the advances are to be made that have marked the past.

Lulu Reynolds, Secretary.

WEST YORK.

The West York Women's Institute was organized in June, 1901, so that it is now in its fourth year. The membership is 143, the largest we have ever had.

We have branches at Kleinburg and Woodbridge, both of which seem to be very much interested in the work.

We have the beginning of a library in a few books we have purchased to aid those who write up papers, etc. We have also bonused "Canadian Good Housekeeping."

I find the meetings are being much better attended than formerly, and everyone seems to be waking up to the fact that the Women's Institute has come to stay.

The benefits of the Institute are seen in bringing people together, and broadening their minds, so that their life and work does not run in such a rut.

The outlook for the coming year is very good.

HELEN GRUBBE, Secretary.

THE GIRL AND THE HOME.

By MRS. BERTHA DAHL LAWS, APPLETON, MINN.

(Delivered at the Ontario Agricultural and Experimental Union Meeting, December 5th, 1904).

The girl and the home are a good combination. It would be difficult to find a better place for the girl, and impossible to find a real home without a girl in it. That being the case, is it not strange that our school system is such that it tends to drag the girl away from the home? She is taught nothing there about the three important periods of her life—womanhood, wifehood, motherhood. She learns all about mathematics and literature, but nothing about how to care for her own body or her home, and this in spite of the fact that the greater part of the life of the vast majority of girls is spent in the home. Woman's work has always been in the home, and it always will be; yet, under our system of education, she is trained more as a business woman. How strange it is that a practical common sense people should pursue such a poor business policy year after year.

There are many who say that a girl should get her domestic instruction in the home. Quite true, provided she can secure it there, which is not the case in the majority of instances. Some mothers are competent to teach their daughters, but the majority are not. Many mothers are ashamed to have their daughters go into the kitchen; yet what is more important for a girl to know than how to manage the home, how to choose the food; how to buy economically, and to understand the best methods of cooking—how to get the best money value out of materials, and then how to make them appetizing. When you can take a piece of meat that cost six cents per pound and cook it so that it will be just as tender and appetizing as a piece that costs eighteen cents, that is good business. What can be more important than to teach her how to serve that food in a dainty, wholesome way; to teach her how to furnish her house for utility, so that twenty-five years from now her furniture will be just as useful to her as it is to-day; to teach her what ventilation and sanitation mean, so that such diseases as consumption and typhoid may be prevented—and they are always preventable—to teach her how to buy clothing so that it will wear well; how to take care of her own health: that perhaps is the most important thing of all. If you tell a farmer how to keep his stock in a thrifty, healthy condition, he will

always listen to you; it is business and it pays. If it pays to know how to feed a cow properly and how to ventilate the stables properly, don't you think it would pay to know how to keep a man properly; surely a man is worth as much as a cow? Then I think that a little knowledge of home nursing is a fine thing to have. All these things apply directly to the girl's life. I have been in homes where mothers taught these things, but there are millions of mothers who cannot. Thousands of mothers have to work in factories and scarcely know their own children; thousands of mothers are not interested in that sort of thing. Even admitting that you may be able to train your daughter perfectly, your son is going to marry some other woman's daughter, and for your son's sake, she must be trained also. It seems strange to me that all mothers are not interested in these things. They say sometimes that girls are not interested in such things, and would rather study something else. I do not think that is true. I have taught thousands of girls, and have rarely found one who could not be taught to take an interest in these matters. It was not because we taught in a fancy way; we had the simplest and plainest of everything, because we wanted them to go to their poor homes and do the things we taught them; but at the same time, we tried to teach in an interesting way. Strange to say, the few who took no interest did not come from the homes of the wealthy, but from the homes of the very poor. It was the girl who came from the slums that was ashamed to confess that she knew anything about household affairs. On one occasion I remember that a poor hard worked, thinly clad woman brought her daughter to the school. Here, I thought, is a woman who will appreciate this work; but I soon found my mistake. She came to have her daughter excused from the cooking school. In explanation she said that she had a very hard time in life, and did not want her daughter to have such a struggle. I pointed out that her daughter must earn her living. "Yes," she said, "I am taking in washing and saving every penny I can that she may study music;" and she did not want her to wash dishes because that spoiled her hands. That girl could never do anything as difficult as to teach music well. She had been brought up by her poor well-meaning but misguided mother in such a way that she would not do anything that she could, and wanted to do the things she could never do.

Mothers are not wholly to blame for these things; the fathers share the responsibility, and they are always ready to place it on the woman's shoulders. When I hear a father boasting that his daughter has learned to play the piano, I often wonder whether he would boast as proudly of his daughter's ability to make a good loaf of bread properly. A piano is a very fine thing; music is a beautiful thing, especially in the country home, where you must find your enjoyment inside of the four walls; but it is not everything. After your daughter marries, she may have to drop her music, but three hundred and sixty-five days in the year, three times a day, a hungry man has to be fed; and it takes a lot of piano playing to make up for a bad dinner.

As we cannot always get this training in the home, we must look for it in some measure at least in the school. You say that the curriculum is already overcrowded; but you have reached a point where you have got to make a choice. What do you want the schools to do for your children? The common school is for the common people, and first and foremost it should fit boys and girls for their life work; if it does not do that, it is a failure. As a matter of fact the aim of the common school is to fit children for the high school, grade by grade; and the aim of the high school

is to graduate its pupils into the university. That is the confessed aim of the whole system. But how many children reach the university? Not four per cent. ever see the high school, much less the university. Eighty per cent. of those who attend the public schools stay only for five years; so that, under this system, you are sacrificing the welfare of eighty per cent. for the sake of four per cent., and of that number not one in four comes from the homes of the poor people. It resolves itself into this, that you are sacrificing the poor people who cannot give their children education in any other way for the sake of the very small percentage who can afford to pay for it anywhere. It does not seem to me that this is a business policy, What does a boy or a girl who goes to school for five years care for the university? How does it help them? The boy goes into the world and has to struggle to earn his bread, and has not received much to help him do so. If we are to improve our schools we must start with the primary schools, so that the boy and girl who has to step out into the world after only five years of instruction will receive a little something that will be useful to them in their everyday lives.

Of what good is all the wealth you may have or your son and daughter may have, if they have not healthy bodies. All the education and all the wealth does not help you much if you have a sick, weakly, miserable body; you cannot do anything for yourself nor for anyone else. How important it is that boys and girls should be made to realize that their capital is their health; that they must take care of it; that the secret of good health is to keep it when you have it. If we can teach them this we shall have accomplished something really worth while. For two or three years I worked in a home for orphan children. We had 750 children of all ages up to sixteen, coming from the slums of big cities. They were scrub stock if anything ever was. From the day they came we built them right up on fresh air, sunlight and pure water; three things which did not cost us a cent. We provided them with plenty of simple food and plenty of work. If you could have seen them step out of the institution, wholesome, healthy men and women, you would not have felt surprised that we were proud of our work. The best thing they learned was how to take care of their own bodies. They also learned a trade and were independent.

Not long ago two boys went to the Superintendent of Police in one of the western cities and asked to be sent to the reformatory. They said, "We want to learn a trade, and cannot in the public school; we cannot find any place to learn a trade except in the reformatory school." Is not that a terrible criticism on the public schools of the country? Criminals may learn a trade while honest children have no opportunity for doing so.

You probably think that in my scheme of education, I would not leave any place for the particularly bright boy and girl. I want them to have their chance, but there are hundreds of willing hands stretched out to help such; it is the common, ordinary child who has no one to help him, and it is these that make up the majority of our people, and it is these we need most. We can get along without the others, but not without the common people. It is a great pity to spoil an excellent farmer for the sake of making a poor lawyer or doctor. It is a great pity to take a girl who would make a splendid housekeeper and make a poor teacher of her. We are proud of our famous women like Harriet Beecher Stowe, the authoress, and Christine Neilson with her wonderful voice, but at the same time we must remember that the life of the ordinary girl is tuned to very different music. The world can get along without these celebrated persons, but not without the woman who stays at home and takes care of that and her children.

HOME INFLUENCE.

By MRS. F. S. WOODS, BRANTFORD.

Home influence! Who can estimate the power of it for good or evil? No one; because it reaches to eternity. We realize this when we remember that the boys and girls we are rearing in our homes to-day will be the men and women of the future, in whose hands will be placed the welfare of our nation and the progress of our Christian church. It is the most important power in the world, because it is brought to bear on human beings when the most lasting impressions are made.

The Jesuits, these men who work in such a powerful way for their church, say, "Give us the children for the first seven years of their lives, and you can have them for all the rest. Our work will be done." Other men who have made a study of the human mind say the same thing, namely, that in the first few years of a child's life impressions are made which can never be effaced. If we believe this, how careful we should be about the influences that surround our children.

When God gives a little child to us He says, "Take this child and rear it for me." It is placed in our hands very much as the lump of clay is given to a potter to mould a vessel with. It has no settled ideas of right or wrong, without a character good or bad, only there is this difference: if the potter is too lazy or indifferent to make anything out of the clay it will remain as it is or crumble into dust, and that is the end of it, but if we do not try to mould our children's characters, we may be sure they will mould themselves, or other people will do it for us, and a sorry, useless vessel is generally the result.

Home influence is of a twofold nature. It acts on our spiritual and physical being. The spiritual is the most important, for no matter how careful we are about our children's manners, education, health and appearance, it will only affect them for time; but if we neglect the spiritual side it may affect them for eternity.

We should never lose sight of the fact that our children are immortal, and that their life here is the least important part of their existence. How often we act as if the reverse were the case? All our anxiety about them is to fit them for this life, to the neglect of the other.

I remember reading a sad little story of a wealthy woman who was left a widow with one son, whom she idolized, but instead of being anxious that he should grow up a good, true man, her whole ambition was that he should become a wealthy, influential member of society. She cared little what the morals were of the men whose acquaintance she cultivated for his sake, as long as they could advance him. After he left school he went to college. She spared no expense for his education, but he fell in with bad company, took to drinking, and in a drunken row one day killed one of his companions. He was arrested and condemned to be hanged. His mother was heartbroken. She went to see him in prison, weeping and lamenting at his hard fate, but he said, "Mother, you may stop your crying; your tears can do me no good. It is too late! too late! Why did you not train me differently when I was a boy at home? I can't remember one good thing you taught me." Don't you think that mother would have given all she possessed to have her chance over again of training her boy aright?

We cannot begin too soon to teach our little ones that they have a Father in heaven who loves them and is ever ready to help them. Teach

them to reverence His Holy Word, and teach them its blessed truths. But remember, if we are to influence them for good we must begin early, because in a few short years our children are grown up and gone from us where our influence cannot reach them, and where they may be surrounded by many evil ones.

We should try to make our homes as happy and attractive as possible for them. A happy home is a blessed remembrance, and a great safeguard to the young when they have to take their place in the world. We cannot all afford large homes and handsome furnishings, but that makes little difference so far as true happiness goes. "Better is a dinner of herbs and love therewith, than a stalled ox with strife."

We should make companions of our children, and let them feel that we take an interest in all that concerns them, and sympathize with all their joys and sorrows. I think there is a great deal of difference between a good housekeeper and a good homemaker. Some women make it the chief aim of their lives to be good housekeepers: to keep everything beautifully clean and neat; to set a good table, etc., but seldom have they any time to spend with the children to read to them or help them with their amusements.

A story I heard will illustrate this. There was a woman you would call a splendid housekeeper: she was never behind with her work, and always kept things shining. She had children, but "took no pleasure in them." She was too busy with her scouring and scrubbing to bother with them. She was continually hunting them out of her way, finding fault with them and scolding them for the litter they made; shouting "Don't do this," "Don't do that," "Don't touch this or that." One day she heard her little girl, who was playing outside, scolding her little brother, finding fault with him and slapping him. "What a tongue that child is getting," she thought. She called to the child, "Mary, what do you mean by treating your little brother in that way?" "Oh," replied the child, "I am just playing housekeeping, and making Ted believe. That is the way you talk to us." That woman might make here daughter a neat, tidy housekeeper, but not a homemaker.

We should let the young people have all the innocent fun and amusement they can, without interfering with their duties, for it may be the only happy time they will have. We know so little what life has in store for our children.

In training our children we should remember that habit is second nature. Some one says, "Sow an act and reap a habit; sow a habit, and reap a character; sow a character, and reap a destiny." We should see to it that our children form good habits before the bad ones get a start, for through our habits we are building character each day.

It is unreasonable for us to expect our children to be better than we are ourselves. If we wish our children to be honest, we should see to it that our conduct is always upright. A father can hardly expect his sons to grow up honest if he tries to get the better of his neighbors when dealing with them, such, for instance, as selling an old, worn-out horse and coming home and boasting how he took that man in. A mother cannot expect her children to have much regard for the truth if she is continually promising them something which she has no intention of giving them. We cannot expect our children to grow up with a charitable spirit toward the faults of others, if all the gossip of the neighborhood is gathered up and the wrongdoers condemned unmercifully in their hearing.

In nearly all the essays I have read on home life, the whole responsibility is thrown on the mother's shoulders, but I do not see why the father's influence should not be just as great. He is the acknowledged head of the house, whose wishes have to be consulted and his consent obtained in all matters concerning the home. The children naturally look upon him as one who should know what is right, and I think it would be a good thing if some one would write about his responsibilities.

The elder brothers and sisters, too, wield a great influence over the younger ones—far greater sometimes than they think. May each of us wield such an influence in our homes that the children in after years may be glad they were reared in them.

COURTESY IN THE HOME.

By MISS GERTRUDE CARTER, GUELPH.

To some, the word "home" is almost a meaningless term, but to the great majority it is one of the sweetest words in the English language; one which thrills us with delight. How often have we felt our hearts burn within us as we have read that poem written by Robert Burns, "The Cotter's Saturday Night," and as we have read the description of that simple Scottish home, so vividly and beautifully told by the poet, we agree with him that,

"From scenes like these Old Scotia's grandeur springs
That makes her loved at home, revered abroad."

Some one has described home as a "world of love shut in, and a world of strife shut out," but another definition, "Home is where we are treated best and grumble most" is quite frequently the correct one.

In order to have that heaven upon earth, a happy home, it is absolutely necessary that each and every member of the family do his best to contribute largely towards the happiness of the home.

"Our homes, so dear, should be the gladsome centre
Of all sweet courtesies, kind words, and deeds;
And naught within its portals e'er should enter
That sows of strife the seeds."

Although discourtesy between the members of the same family is quite frequently noticed, yet, that boy or that girl, who can be so cross and so irritable at home, can be a perfect lady or a perfect gentleman away from home. But, because we live in the same house, we see each other so frequently, and become so familiar with them, we neglect to watch our tongues, and our actions.

Let us look at a few homely and everyday acts of discourtesy. The young son has not slept very well, and rises in a very irritable mood. He is not just as careful and tidy as he might be, so it is not to be wondered at, that he cannot find his boots, his cap or his books. He commences to search for them, at the same time complaining that some one has hidden them. How long does it take such a boy to disturb the peace of the home? Are we not glad when we see the door close on his retreating figure? Does it not take an hour or two to restore the usual quietness and calmness of the home?

It is not just the easiest thing in the world for two or three women to live peaceably in the same house. Usually each woman has her ideal way

of keeping house, and perhaps has a hobby which she delights to ride to the chagrin of the other ladies in the house.

So we frequently find that sisters disagree and jangle among themselves, and sometimes the atmosphere of the home is agitated into a high state of ferment. Let us suppose that at such a time the door-bell rings, and a visitor is announced. She is received by the sisters with extreme courtesy and kindness. All angry feelings are abandoned for the time being, and a pleasant time is spent with the caller. As she goes away, she says to herself, "What a beautiful home! How agreeable and pleasant those sisters are to each other!" Yet, all the pleasantries were because of the appearance of a visitor. Those sisters gave to a stranger the respect and courtesy which they failed to render to the members of their own family.

There is a remedy for many of the little troubles in the home, and it rarely fails to bring about a good result. It is this: when we find a member of the family out of sorts and in bad humor, that is the time for you and me to watch our tempers, watch our words, and watch our actions. It takes two to make a quarrel every time, and unless the bad tempered one receives some material to work upon, his passion will soon have spent itself.

"It is easy enough to be pleasant
When life flows by like a song.
But the man worth while is the one who will smile
When everything goes wrong."

In some homes we have what might be termed "chronic grumblers." The mother always has plenty of work to take up her time, especially in the morning. She prepares what she considers to be a good dinner, and cooks it to the best of her ability. When dinner is announced, and the family is seated around the table the mother receives her thanks for her labor of love. This is how it sounds. "This meat is too rare." "Mine is cooked too much." "Mother must have emptied the bag of salt into this soup," and so on. What pleases one displeases another, and everyone joins in the grumbling. Is it any wonder that the poor mother feels that her lot in life is indeed a thankless one? Suppose on the other hand that one had said, "Mother, your meat is cooked beautifully," and another had added, "Yes, mother, I have enjoyed my dinner very much, thank you," and the youngest son had said, "Mother, this pie is splendid, may I have another piece?" What a different home it would be! Did you ever notice your mother's face light up when her cooking is praised? If you have not, try the experiment, and the smile will repay you for your trouble.

Let us follow a young man who is so good at the grumbling act in his own home, and let us watch him while he takes dinner with a friend. How mannerly and courteous he is to everyone around him! Does he grumble at the food? Oh, no! Indeed not! He would not dare to so transgress all laws of etiquette and courtesy. Then here comes the question, "Is a stranger more worthy of courtesy and respect than his own mother?" No! A thousand times no! But because she is his mother, he sees her so often, and he knows her so well, he forgets, he neglects to give to her the little acts of courtesy he would accord a stranger.

These are only little things, little acts of carelessness, little acts of neglectfulness, little acts of omission rather than commission, but they all help to whiten the mother's hair, and bring the wrinkle to her brow. We cannot always have our mother with us, to wait upon us, and worry about us. Frequently when the mother is called away we find the coffin heaped with flowers, an expression of love. Would it not be better to give her the roses while she can appreciate them, not in the actual flowers, but in the

many little acts of kindness and thoughtfulness, which will brighten her life and bring the smile of contentment to her face. If you appreciate her bravery, her self-denial, and her love, say so. The mother delights to make home pleasant and attractive for her boys and girls, and she cannot receive too much praise for her self-sacrificing labors of love.

A boy or a young man is always better of a girl's society, and a sister is the best comrade in the world. If a young man could always remember to treat his own sister with the same courtesy he extends to someone else's sister he would be abundantly repaid for his trouble. The sister will do her best to make home attractive for him and his friends. A young man will not go very far astray when he remembers his home. The silent, unconscious influence of a loving, unselfish, noble sister and mother will follow him wherever he goes; and this influence constitutes one of his greatest safeguards in times of temptation.

Much is said about the franchise for women and their rights. Women doubtless have rights, and the greatest in the world; but they are the training of the boys and the girls in the home to be noble men and women in thought, in word and in deed. Let the children learn from their home life to walk in the right way, and their influence will be on the side of right every time. Herbert Spencer says, "If women comprehend all that is contained in the domestic sphere, they would ask no other. If they could see all that is implied in the right education of children, they should seek no higher functions." That many of our Canadian women have comprehended this is shown by the noble, honest and pure men and women they have raised; men and women who are an honor to their country, and a credit to the mothers who have raised them.

ONE EYE IN THE FIELD, THE OTHER IN THE TOWN.

BY MISS LAURA ROSE, GUELPH.

The eye is spoken of as the window of the soul; the microscope through which we see the workings of another person's mind; a telegraph which flashes its messages from one mind to another; for have we not all thrilled at the glance of some eye? It is the camera on which is photographed the constantly changing scenes which the nerves of sight carry to the brain.

Again the eye is personified to mean the attention or mind, as in such expressions as "I've had my eye on that farm for many a day, and I'll own it yet," or "Mary, keep your eye on the baby while mother gets the supper."

There is not a feature of the face more indicative of character than the eye, and this fact has given rise to sayings like, "That man is worth watching, I don't like the look of his eye;" or on a much different occasion one might hear, "Tender are thine eyes and true."

The title of my talk, "One eye in the Field; the other in the Town," is an old French proverb, and in it lies the truth that to get the most out of life a person must look beyond the square of land he tills, into the realms around him, to see and learn what his fellow beings are doing. When we have our two eyes constantly poring over our own little work, never raising them to see what is transpiring in the world around us, are we not apt to be left far behind in the ditch—no longer a rut—we have dugged for ourselves. Improvement lies in learning what others have done, and going beyond that; and this knowledge can only be obtained by casting one's eye abroad.

In any branch of business ignorance is certain failure, while success lies in the knowing how. Very often we are ignorant of our own ignorance, and it is only when we lift our eyes from our own fields and see what other people are doing, that we become aware of our mistakes. This is why travelling, and occasional visits to friends living in different parts of the country, bring in such rich returns, besides being a most pleasant and easy way of gaining knowledge. A person going about with wide-open eyes cannot fail to gather information which will make his work easier and more profitable.

Opticians tell us that people living in the country have further and better sight than people living in town, and account for it from the fact that town people spend most of their time behind counters or desks, and have their nerves of sight so continuously contracted, that in time they are incapable of seeing objects at a long distance. Not so the farmer, blessed man that he is! He spends most of his time out of doors, with nothing to mar his sight but the blue vaulted skies of heaven and the everlasting hills, and so he retains his until a good old age.

I might use this fact as an illustration of the mental sight, for I believe it to be true that as a class the rural people have clearer views of the many great questions of interest to our country at large, than have the town people, with so many trifling things to disturb them and take up their time.

Of all classes of men the farmer is the one who has the most within himself, and is consequently the most independent and least beholdling to all other classes. He can grow all the grain, fruits, vegetables, meat, etc., for his own consumption; raise the wool to clothe him; the leather to shoe him, and fell the timber to build him an house. We would hardly admire the man, though, who within the bounds of civilization made a "Robinson Crusoe" of himself, living to himself, and for himself, and by himself. We must, if we want to help and be helped by our fellowmen, get as near in touch to them as we can—make their interests our interests, and so attach ourselves to them, that while each strives to better his own condition it shall not be to the injury and downfall of his neighbors. I contend that no man on earth can more easily and honestly help his fellow-worker than can the prospering farmer. Instead of taking away trade, his very prosperity acts as a stimulus to his less thrifty neighbor.

Why should the farmer have one eye in the field, and the other in the town? And mark you, I emphasize *one* eye. I have known a few farmers who had two eyes in town, and they did not do the town much good and the farms were no credit to them. Why one eye in the town? Because it is there that he learns what the world is in need of from his fields; whether the market is demanding a greater supply of fall wheat or spring wheat; whether the price of barley or oats is likely to rise, and if so to put in a larger acreage; whether there is a demand for heavy or light weight beef, or for hogs to produce bacon and hams, so that he may regulate his stock accordingly.

From the town the farmer gets his papers the fruit of the press crammed full of information and knowledge. In these papers the farmer reads of the increasing demands for Canadian butter and cheese, and of the fair profits arising from exporting these products; also the cold storage system, which our Honorable Minister of Agriculture is so earnestly working for and seeing established in our towns, railroad cars and ocean steamships. The establishing of this system will make the handling of all perishable products a more sure business, and will bring into our country

millions of dollars which in former years found their way into the ports of Denmark, France and other countries.

Then the farmer knows that markets which offer a good price for his products are opening up, which is not only an impetus for him to increase his output, but also to raise the standard and so reap the benefit of the highest market price. We must not feel discouraged if markets close at hand are in some respects practically closed to us through the imposing of high duties. "The Khan" gave us some appropriate verses when the duty was placed on eggs. He said:

"I have a hen, she hath a name—Macduff,
She's both prolific, musical and tough,
The Yanks have fixed—she heard the neighbors say—
Five cents a dozen on her lay.
"I'll lay no more," she cackled in a huff,
Until the rooster roared, "Lay on, Macduff."

"Robert the Bruce he knew not where to turn.
His triumph came at bloody Bannockburn.
Eat wheat, O hen! and oyster shell and bone,
And be a credit to the northern zone.
Be patriotic, show them you're the stuff.
See, yonder is the stack! Lay on, Macduff."

"Great Britain, big, for all our produce begs:
Perhaps the King himself may eat your eggs.
Stick to your colors like a little hen,
We'll stand the racket if the Yankees ken;
Hence, to the stack," he cried, "lay on, Macduff.
And cursed be he who first shall cry, 'Enough!'"

The farmer brings to the town the raw materials from his fields, the wool, grain and timber. In large manufactories these products are converted into cloth, flour, lumber. Again they undergo another transformation. The cloth is made into clothes; the flour is converted into bread and cake; the lumber manufactured into furniture and machinery.

The manufacturing of all the raw materials and the disposing of it afterwards, employs thousands, yea millions, of people, and these people congregated together make towns. If we trace their origin back then, do we not find it is the hard work of the farmer which most materially assists in establishing and maintaining these towns?

If we think of the source of all the necessities and comforts we enjoy, we shall find that nine-tenths of them spring from Mother Earth and are conveyed to us through the medium of the tiller of the soil. But while the town people are so dependent on the farmers for their sustenance and labor, the farmer is to a large extent equally dependent. He takes his raw material to town and brings back the manufactured article. It is only a matter of exchange.

To me the country and town are like a well-mated couple, united in the bonds of matrimony for mutual help and support—each quite incapable of carrying on its life's work without the sympathy, aid and counsel of the other. United they live and thrive; severed they shrivel up and die.

When we consider how close the link between the producer and the consumer, the seller and the buyer, should there not exist between them the closest bond of confidence and good feeling? While we know this to be true, is it not a deplorable fact that there is not a more intimate relationship between the two classes? The country people are apt to judge the town people rather harshly, and to say they are proud, big-feeling, and think of nothing but dress and show, while the town people are perhaps just as

free with their opinions, and call their rural friends slow and away behind the times. The only way I see to rectify this state of affairs is to cultivate a closer friendship. Then the farmer will see that behind the tinsel and show of his townsman there lies a warm heart and a generous hand; while the town people will discover that the farmer is but the diamond in the rough, and all that is necessary is a little polishing to bring clearer to view the sterling character and intellectual vigor that lie beneath.

The farmer of the present day realizes that to take his place in the world with other men he has to pay attention both to his manner and dress, and this is going to do much toward pulling down the invisible wall which separates those living in the town and those living in the country into two classes.

The farmer needs to have city friends; needs to make them, and needs to keep them, and this can only be done by mingling together. You say you have no time for friendly intercourse. There is always so much shopping and business to attend to you have no time for visiting or a half hour's chat. I always feel sorry for the man or the woman whose time is so fully occupied with the work and worry of this work-a-day world, they have no time to spare on their friends. What are we on this earth for? Is it merely to feed and clothe our bodies, and perchance to lay by a few dollars for somebody to quarrel over when we are gone? Most emphatically, No! I believe we are to take as much healthful pleasure and recreation as we can sandwich in with our necessary work, and not to defer doing so until we have the leisure or are comfortably well off, if that day ever arrives. You may then be like the man who when he was a small boy wanted some taffy he saw in a shop window, but had no penny to buy it. When he grew to be a man he had lots of pennies, but alas, he did not want the taffy. If we wait until we are old to enjoy life, the desire and appreciation for a good time will have long since died from starvation. Take a little pleasure whenever you reasonably can, for remember life is short at best, and as the Yankee says, "We are a long time dead."

Have your eye on the town, and whenever you see a good concert or lecture advertised, make an effort to bring in your wife, or if you haven't one, then your sister—or better still, somebody else's sister. An occasional outing of this kind gives one something new to think and talk about. Such things are great educators, and keep one in touch with the best artists and thinkers of our day.

Again, if you are seeking to promote a more congenial feeling with your fellow citizens you must read, not merely farm magazines or journals, for that makes a one-sided man, but read to keep posted in the general topics of the day. Read the standard works of our greatest authors, and you will make yourself not only fit and congenial company for any class of society, but will make yourself better company for yourself. People with a well-stored mind seldom get lonely. I would not like to infer that our agriculturists as a class are not readers. I think many of them have more inclination and find more leisure for this means of gaining knowledge than their city brothers.

It is wise to keep an eye on the political world, so that you may be able to use with wisdom and intelligence the privilege which your manhood gives you. Do we not look to the farm to produce our best and greatest men, and it is hard to prophesy where the future may find some of you, very likely filling some of the highest and most honorable positions our Government or cities have to offer. A canvass of the prominent men of New York city shows that eighty-five per cent. were reared in villages or rural districts.

Eighty per cent. of the students in the colleges and seminaries in and about Chicago come from the country. Young people in the country learn much with their eyes and ears from Nature as well as from books, and they do their own thinking. City boys have little opportunity to display any individuality.

Keen competition and low margin in profits are telling on the integrity of our business men. Frequently do we hear of failures, and frequently is it the keen-eyed man from the country who steps in to fill the vacancy. Never was there such a demand for sterling character.

"God give us men! A time like this demands
Strong minds, great hearts, true faith and steady hands,
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinion and a will;
Men who have honor, men who will not lie;
Men who can stand before a demagogue
And scorn his treacherous flatteries without winking,
Tall men—sun crowned—who live above the fog,
In public duty or in private thinking."

For just such men we have to look to the country, so while it behoves us as agriculturists to keep one eye with all earnestness and diligence on our fields, let us with brotherly love and interest rest the other eye on the town.

SENSE AND NONSENSE.

BY HELEN WELLS, SYRACUSE, N. Y.

"A little nonsense now and then is relished by the best of men," sang a wise man, and it is true. It is the little pleasantry that helps to brighten the days; the humorous side of life that relieves the anxious pressure of our work-a-day world. The eyes that see fun are always the brightest. The little wrinkles that laughter draws around them are ornamental to any face; the merry smile that betokens the cheerful heart is a card of admission to any circle.

We do not have half enough fun in our life. We too often rehash uncomfortable, disagreeable events, and leave unnoticed the humorous incident. Did you ever notice the gusto with which people will minutely describe every pain and ache and disease—just when it began and just where it ended! And the party to whom it is being related is not half listening, because she is racking her memory in order to match the chamber of miseries with a tale equally as bad. They leave each other in a worse condition than when they met. Better far have spent the time relating some little, nonsensical, laugh-provoking anecdote, for laughter starts the circulation and rests one.

We usually think of the word "nonsense" as meaning the light jingle of fun, not deep enough for wit, nor keen enough for satire. But the little light froth of repartee that brings the smiles and cheers the heart is one of the best things in the world to smoothe and brighten and add spice to the family life.

There is another meaning to the word—"non-sense"—without sense. Sometimes it seems as if we admitted a great deal of that kind of nonsense into our lives. Society acknowledges the fact that crime is on the increase. Clubs are organized for its suppression; there are temperance societies to

reform the drunkard; Magdalene societies to take care of wayward girls and women; hospitals and institutions without limit to take care of the wretched ones, who through crime and wrong-doing are wrecked. Meanwhile the number grows none the less. The on-coming generation are furnishing fresh recruits, whose moral perception is as dull as that of the fathers before them. The Government patiently goes on building additions to the jails and penitentiaries, and enlarging homes for inebriate wrecks, adding to the taxes of the honest, law-abiding citizens, who must be taxed to the uttermost to support these criminal classes. Is it sense or non-sense to burden our people by aiding these people and meanwhile to do nothing for the children of these degenerates that will educate and develop the moral sense in them so they may not follow in their fathers' steps?

In our school system to-day there is nothing obligatory that will train into active use the moral nature of a child. A perfect education should equally train the intellect, the body and the heart. We have a fine system of education for the intellect, and a good method for the physical development, but *what* have we done for the training of the child's moral nature? Considering the money it costs you and me, considering the moral influence of these young people upon our own loved children, is our course in education that of sense or non-sense?

No matter whether the boy comes from the slums or the palace, if his intellect and body are developed, and his heart or moral perception is narrow and dull and cruel, we have only an educated fiend, all the more dangerous because of his education.

Educate the children in sympathy, in care and tenderness for the dependent, and we will soon depopulate our homes for the aged, our asylums and alms houses, for many of the inhabitants should be cared for in the homes of relatives. When we depopulate these institutions we lower our taxes. Is this sense or non-sense?

When a father gives Johnny a little calf or pig for his own to feed and care for all through the long summer and winter until he grows into a full-sized animal, and then Johnny's calf becomes pa's cow, and the money goes into pa's pocket, is it sense to expect that that dishonest act of cheating his own boy out of his rights will be forgotten? Should we be surprised if such a father is cheated out of his home in old age by that son? "As ye sow so shall ye reap."

There are certain laws of physiology which as women we are apt to violate, and as we grow older the form loses its youthful grace and we become stiff and clumsy. But not necessarily! Oh, no! There is no reason why a man or woman at eighty should not have the trim figure of eighteen. Is it sense or non-sense to ignore these little rules that will make our work easy, our figure trim, and our health good? Yet if one speaks of physical culture to the average busy woman she exclaims, "Do not say a word to me about physical culture, I get all the exercise I want running around that kitchen." Any line of work that we pursue habitually exercises one set of muscles. The muscles that are used develop; those that are not used will not grow. Consequently to keep the natural symmetry of figure we must take some line of exercise that will bring into active play the muscles that are not called into use by our daily labor. So, to the woman working around a kitchen, or the woman engaged in sewing, or in any one line of work, the necessity for physical culture is more important than those whose duties exercise all parts of the body. We cannot disregard these laws of nature without suffering pain. Which is sense? to study them and keep

fresh and young and pay out nothing in money, or to disregard them and suffer the consequent ills and aches and settle doctors' bills?

We study balanced rations for the cows—so much protein, so much carbohydrates, etc.—to develop the cow perfectly. At our tables sit our children, dearer to us a thousand times than the cows. They need food that will equally develop blood, muscle, bone, tissue, nerves and flesh. Are we feeding *them* the necessary balanced rations to make them strong and healthy men and women fitted to bear life's burdens? Or are we starving one need while we over-feed another, producing physical wrecks that are a curse to themselves and others? Is this ignorance of the proper food for our children sense or non-sense?

There is a leaflet published by the New York State Grange, on "Food for the Growing Child," that will be sent to any person applying for it, just for the postage. Address Mr. Newton Jiles, Secretary, New York State Grange, Skaneateles, N. Y. This little leaflet is a great help to mothers.

We cannot admire ugliness, and admiration is a great stimulus to love. Can we expect to keep the lamp of conjugal love burning brightly if its rays fall upon frowsy hair and untidy clothes? "It is so silly to fix up just for one's wife or husband." Is it? The plain, neat costume all day leaves a much more agreeable memory than curl papers and careless clothes until six o'clock, and then neat clothes for two or three hours. It is time well spent to arrange the hair neatly before beginning the day's work.

To keep the admiration of the children is good sense. An unshaven face and towsey hair is such an unattractive picture. A man who keeps himself looking neat and tidy will be much more apt to keep his place to correspond, for it is habit that forms character.

The true philosophy of love is to learn intelligently to enjoy the things by which we are surrounded; to make them beautiful so we can enjoy them, instead of sighing for things beyond our reach. Of how many of us might it be said "Eyes have they but they see not, ears have they but they hear not?" The song of the bird is unnoticed, the beauty of the flower unseen, the friendship offered to us by the beasts around us is unappreciated, and we live a narrow, sordid life, with our eyes fixed upon just one goal—the dollar. And we say "We do not enjoy the country; we want to get into town where there is more chance to grasp those beautiful dollars. Bye and bye we are going to enjoy life: bye and bye we are going to enjoy the beautiful." Yes, bye and bye. But when the bye and bye comes the capacity for enjoyment has never been developed. "Use makes growth." The muscles we use grow; the characteristics we use will develop. So, when we study nature, not to see how many dollars we can get out of it, but to understand the wonderful mysteries of love and intelligence through which God speaks to us, we stand with reverence before the work of His hands. That wonderful instinct that leads the bee to the heart of the blushing rose, that depth of faithfulness that looks out of the eyes of a dog, the marvelous understanding of our moods that he shows, the loyalty, the devotion—a reproach to us—how many of us can be as true to our friends as our dog is to us?

Our little bird warriors that go forth to slay our insect enemies, do we appreciate them? When our ears are opened to hear the music of the brook as it laughs and gurgles all to itself in the cool shade of the trees; to hear God's voice in the roaring of the tempest or in the gentlest breeze; to know the voices of the robin, the bluebird and the bobolink as the voices of friends, when we have opened our ears to these voices of nature we have added to our capacity for happiness a thousandfold. All our strivings after

money are only that we may attain happiness. If the opening of deaf ears and blind eyes will give us happiness, is it not sense to take this short cut to that desired end?

It is love that oils the wheel of life. It is the sentiment that comes from love of all beautiful things that live that makes happiness. Encourage the little one to love her dolly and her kitten. It is a wise education you are giving her. Teach the child to look at the fields, with the waving blossoms and the hovering butterflies, and weave little stories about them. You are increasing her capacity for enjoyment. I pity the one to whom music does not appeal. That one has lost a large measure of life's happiness. I am sorry for the one who sees no beauty in flowers and foliage, for much has gone out of that life. But most of all I grieve for the one who is blind to the love looking out at him from the eyes of the animals, who cannot understand their intelligence, their sensitiveness, their sorrows.

As we understand the love by which we are surrounded we get a glimmering of the divine love which placed us all in the respective places which makes us dependent upon each other. Let us praise God who has opened our blind eyes and ears and given us sense to hear and understand even the tiniest of Nature's voices.

ECONOMY IN SMALL THINGS.

By MISS BERTHA A. DUNCAN, EMERY.

Economy in small things is good management. There are so many ways in which carelessness will result in loss, that the housekeeper should make a study of the work all over the house. Particularly does this apply to the small pieces of food left over from the various meals of the day. With many people there is a tendency to throw away crusts of bread, small pieces of fat and lean meat, and many other things which seem of no particular value. All such pieces can be utilized in some way, and should never be wasted.

Many times has it been said by people who have had a great deal of experience in housekeeping, "We have no time for making up 'fancy dishes,' we just serve plain food." The "fancy dishes" as they say, may be one of two kinds,—the left-overs from dinner prepared in such a way as to make them more palatable and more attractive, or they may be made of some ingredients which have not been served before. The economical housekeeper indulges less frequently in the latter class than in the former.

A great many people are of the opinion that the sink is a convenient receptacle for disposing of the water in which vegetables have been cooked. If only they realized how much they were wasting by throwing away the vegetable-water, surely they would never do it. In cooking vegetables a considerable amount of the nutrients is dissolved in the water—particularly mineral matter—and as vegetables are our chief source of obtaining mineral matter we should try to retain as much of these nutrients as possible. By saving the water in which they are cooked, and using the vegetable left over from the meal, with the addition of milk, butter, flour and seasonings, a very nutritious cream of vegetable (carrot, parsnip, pea or whatever vegetable is used) soup may be made. Some vegetables are not desirable for cream soups because they are too strong, as for example onions and cabbage, but a little of these in soups gives a distinctive flavor.

Often there are pieces of meat left over from a meal, which are not sufficient nor attractive enough in themselves to be served at another meal. By removing the surplus fat (which makes good dripping), putting the bone into the soup kettle, and mincing the meat and adding other ingredients such as bread crumbs, milk, eggs, and seasonings, various very attractive and wholesome dishes may be made, as for example: Egg gems, minced meat on toast, meat croquettes, etc.

Not only does good management imply that we use the left-overs from different meals, but also that we make up these dishes during the spare minutes which would otherwise be wasted in waiting for some other work to reach the stage of completion; and at such a time that fuel is economized by preparing as much food as possible while we have a good fire burning.

By working intelligently and consuming as little time as possible, there is more time left to devote to intellectual and social pleasures. It affords time for the study of sanitary laws so that the household may be kept in a more healthful condition.

A few more examples of economy might be helpful.

Keep tea and coffee in close-covered cans, or they will lose their strength.

Pieces of stale bread left away to dry may be ground up and used for covering croquettes, "made-over" dishes, which are baked in the oven, etc.

A soup kettle is an excellent means of economizing. Into it can be put bones, hardened parts of meat, vegetables and water, and a delicious soup can be made.

Use soft paper to wipe off a greasy pan before washing it. This paper is excellent for lighting a fire.

Hang the broom up by a string at the end, and wash thoroughly once a week.

The chief object of every person should be "Economy,"—that is, the obtaining of the best results with the least expenditure. By saving in small things we are practising this in the highest degree.

Q. Is it necessary to add soda in making cream soups?

A. Only when there is an acid in the vegetable, as for example the acid of the tomato. The object in using soda is to neutralize the acid, and prevent the milk curdling when the tomato is added.

Q. Does the meat used in making soup stock lose all its food value?

A. If the stock is made properly the greater part of the nutrients are lost, but not all; therefore, we must use this meat in combination with other food stuffs, such as eggs (which are highly concentrated), in order to obtain as much of the nutrients as possible.

Q. How long can you keep soup stock?

A. Allow the fat to remain on the top of the stock, and as long as it is not broken the stock will be good.

Q. Do you follow the same rule in boiling meat as in making soup stock?

A. In making stock we put the meat on to cook in cold water in order to extract the juices, whereas in boiling meat we want to retain these juices. So we plunge the meat into boiling water and keep the temperature high for a few minutes, then lower the temperature after the outer coating is formed.

Q. Are all vegetables suitable for cream soups?

A. Any vegetables may be used, but strong smelling vegetables like onions and cabbage are not so desirable as others.

Q. What is the reason that onions do not agree with so many people?

A. They contain an essential oil which may be removed by adding a little soda and boiling water enough to cover. Allow them to stand in a warm place for a few minutes, then drain, and add fresh boiling water, and cook in an uncovered sauce pan at simmering point.

Q. What object have you in using the water in which the vegetables were cooked?

A. In cooking vegetables some of the food substances have been dissolved in the water, and it is not economical to waste them. Therefore, the vegetable water should be used in making soups or sauces for vegetables.

Q. Why is split-pea soup sometimes "grainy?"

A. Both peas and beans require long, slow cooking to prevent them being "grainy." A good plan is to simmer the peas the day before they are required, stirring occasionally. Reheating does them no harm. The longer they are cooked the less "grainy" the soup will be.

HOME NURSING AND FOOD FOR THE SICK.

BY MISS MABEL SANDERSON, BRANTFORD.

In caring for the sick in our own homes perhaps the first thing to be considered is the selection and preparation of the sick room. It should be on the sunny side of the house if possible, and should be well ventilated. If the light is too bright, the bed should be made so that the patient may lie with her back toward the window, or so that a screen may be placed before the window. But if the disease be of the eye or brain, the room must of course be darkened.

It should be remembered that the sick room is the home of the patient during the time she is in it, and great care should be taken by the nurse to keep the room clean, the air pure and fresh, and herself cheerful, quiet and gentle. This sounds all very well if she has nothing to do but attend to the sick one, but the home-nurse usually has all the other housework to attend to as well. Then when the stove smokes and the fire will not burn; the bread is ready for the oven, the patient's bath and medicine should be given, and a half dozen other things are calling for attention at once, it requires a good deal of grace to be always bright and cheerful. But the nurse should strive to be so in the sick-room no matter what she may be in the kitchen.

If it can be managed it is better to have a painted floor in the sick room, simple muslin curtains, and no more furniture than is necesasry. We can then wipe everything with a damp cloth, and do away with almost all dust. Especially in infectious diseases will this be found a great advantage, as carpets, woollens and paper are splendid hiding places for germs of all kinds. A room of this kind is very much sweeter and fresher and also far more restful. How many people have been almost distracted following some interwoven pattern on a paper or counting the number of roses between the door and window, or looking at some picture in the room until it becomes a perfect nightmare to them? If we must have pictures in the room they should be of quiet tones or prints, and change them occasionally. Flowers are the very best decoration for the sick room; they are so bright, sweet and refreshing. But care must be taken even here to keep only the freshest ones and to change the water frequently. Never allow an accumulation of bottles, glasses, spoons, etc., in the room. They look very untidy, and are enough to spoil a patient's appetite altogether. In fact cleanliness and daintiness should be the keynote of the sick room.

The temperature of the room must be kept as even as possible—from 65 degrees to 70 degrees. A point to be remembered is that the temperature decreases at night, and that between the hours of twelve and four a.m., the vital powers are at their lowest ebb. The patient must be carefully watched, hot drink be given, and extra heaters and blankets be applied if necessary.

The air of the room must be kept pure, wholesome and cool. To keep a room cool in hot weather is not an easy matter; but good results have been obtained by keeping the shutters closed during the day and opening them in the evening. If sheets are wrung out of cold water and hung in front of the open window they will cool the air wonderfully. Dry air, which is very irritating, can be made moist by keeping a kettle of boiling water in the room, or by dropping hot bricks in a pail of water. Boiling vinegar will be found very refreshing, and is a splendid disinfectant.

We must also keep the room well ventilated. It is very important that a sick person should be supplied with fresh air. In almost every case the window can be kept open one and a half inches from the top, without injury to the patient; or a board from four to six inches wide may be placed in the lower window sash, and the fresh air will enter between the sashes, thus preventing a draught. If the window is opened top and bottom and the patient well covered, also a screen placed before the window (a blanket or shawl thrown over a clothes-horse makes a very good one), or even an umbrella held up between the patient and the window, there will be very little danger of cold.

Probably the next thing to consider is the bed. An iron bedstead, with springs and a hair mattress, is the best. An iron bed is very easily kept clean, and there is a better circulation of air around it. In making the bed be sure and have the under sheet tucked well in at the top and sides, even if it is not long enough to come to the bottom, as it is much easier to pull an under sheet down to the bottom than up to the top. Then pin the sheet with safety pins to the mattress to prevent wrinkles. Next come the rubber sheet and draw sheet. Then the upper sheet, blankets and spread must be tucked securely at the foot. Guard against wrinkles or crumbs in the bed, as they are very apt to cause bed-sores. It sometimes requires a great deal of care to prevent them, especially in cases where the patient must lie in one position for any length of time. In fever cases the skin is very tender, and any spot the clothing touches causing friction, will require a great deal of attention and care to keep it from getting sore. Keep the back, knees, elbows and heels well rubbed with some form of alcohol or witch hazel, and if any spot gets the least bit red or inflamed, powder with oxide of zinc, bismuth, cornstarch, or borax.

Before beginning to change the bed linen everything must be thoroughly warmed and aired. The patient is moved to one side of the bed, the upper sheet, draw sheet and under sheet are loosened and pushed well over against the patient's back. The clean undersheet, rubber and draw sheets are then inserted, tucked in well, and spread smoothly on the one side, and the surplus rolled up close to the soiled sheets. The upper clothing is then spread out, and the patient moved back to the clean side after which the soiled sheets can be removed and the clean ones well stretched and tucked in on the other side. To change the upper sheet, the spread and one blanket is removed; over the soiled sheet put the clean sheet and blanket; hold on to them with one hand, and with the other draw the soiled ones to the foot of the bed and remove. In changing the bed in this way we guard against exposing and chilling the patient.

To change the night-dress loosen it at the neck and wrists and bring well up under the shoulders. Take one arm out of the soiled garment and put on the corresponding clean sleeve, and slip both garments over the head. This slips soiled ones off and clean ones on. Then go around to the other side of the bed and remove the soiled clothing. Put on the other clean sleeve. Raise the patient slightly and pull the clothing down smoothly at the back.

When one side is injured, the clothes should be taken off the sound side first, and put on the injured side first. This will save the patient a good deal of unnecessary pain. Should one or both arms be fractured, open the sleeves from the neck to the wrist, and stitch tapes on each side four to six inches apart. Raise the arm, place the sleeve under and tie the tapes.

Pillows of all shapes and sizes will be found a great comfort as they can be tucked in all sorts of odd corners to relieve any particularly tired spot. They can be tucked under the back and shoulders, or down one side of a patient to partially turn her over, because even the slightest change is often a great rest. If put under the knees they will take a good deal of strain from the back. They can be used to support injured limbs or to keep the bed-clothes up, and if one is placed at the foot of the bed it will keep the patient from slipping. Such pillows may be made from cotton batting or wool, covered with cheese cloth, if one has not enough feathers available.

When the patient is able to sit up awhile, a straight-backed chair with the legs resting against the head of the bed and the back on the mattress, will make a splendid back-rest, if a pillow is pushed well down to the small of the back, and two or three more placed between the head and shoulders and the chair. A pillow placed on the knees will be found a great support, and will prevent the patient from slipping.

A good way to move a helpless patient is for two people to stand, one each side of the bed, and grasping each other's wrists under the patient's shoulder's and knees, both lift toward the head of the bed, or whatever way they wish to move the patient.

The hair must be combed every day and be braided in two braids. Then it can be combed with very little moving of the patient. If the hair is very much matted it must be combed a little at a time, and if it tries the patient too much it is better to leave part until later in the day.

The mouth must be attended to punctually, and to be kept perfectly clean should be washed at least three times a day with some good antiseptic such as listerine, and the teeth carefully brushed. Make a swab of absorbent cotton on a tooth-pick or match-stick, and wash well around the roof of the mouth, gums and tongue.

The temperature, pulse and respiration, which are called the three vital signs, are so closely connected that whatever affects one usually affects the others. When any part of the system is out of order it is at once shown by the rise or fall of the temperature. The normal temperature is 98 3-5 degrees. Before using a clinical thermometer, it is placed in cold water and wiped dry. The mercury is shaken down to 95 degrees, and the bulb is placed under the tongue and the lips kept closed for three minutes. After the temperature is taken the thermometer is dipped in alcohol or some disinfectant solution to guard against any chance of infection.

While the thermometer is being used the pulse and respiration may be taken at the same time. Every time the heart contracts, blood is thrown into the arteries, which are distended on receiving the blood. It is this distention, this rising up of the walls of the arteries at regular intervals corresponding with the beatings of the heart, that is called the pulse. The

way to take the pulse is to place two or three fingers on the radial artery at the wrist and count the pulsations for one minute, or else a half minute and multiply the result by two. The normal pulse beat is:

Infants	130 to 150
1 year	110 to 130
2 years	90 to 115
3 years	80 to 110
7 years	72 to 80
12 years	76 to 76
Prime of life	70 to 75
In old age	65 to 70

These are considered the average normal marks, but it must be remembered that there is apt to be a slight variation above or below the average, according to the temperament of the individual. For instance, an easy-going, placid person will have a slower pulse and frequently a lower normal temperature, than one of a nervous excitable disposition. A rise in temperature or an increase in pulse or respiration is not so important in a child as in an adult, as they are much less stable, being readily disturbed by slight causes. If possible, count the respiration without the knowledge of the patient, because if she is conscious that she is being watched it will be impossible to breathe naturally. The normal respirations in infants are from 30 to 35; at the fifth year, 20 to 25; and from then on the same as an adult, 16 to 18. Respiration below 12 or over 30 should always be reported.

It is almost unnecessary to say much about the treatment of different cases, as the most important thing for the home nurse to do is to follow the doctor's orders faithfully and accurately. But we might consider how to poultice, give fomentations, medicines, etc.

Linseed poultices are more frequently used than any others, and it is very important to know exactly how to make them. They should always be very hot, light and moist. Never try to make them unless the water is actually boiling. About one or two cups of water is enough for an ordinary-sized poultice. As soon as the water boils, shake in a handful of meal, stirring briskly. When it is as thick as a good batter and evenly mixed, it is ready for use. Spread evenly about half an inch thick on a piece of old muslin or linen twice the size needed for the poultice, so as to leave a large margin all around to turn up. Roll in a towel and carry between two hot plates. When applying the poultice place the hand under it, the back of the hand resting on the part to which it is to be applied and slowly remove the hand. This will accustom the patient to the heat, and it is much better than suddenly putting a hot poultice on already tender and sensitive skin. Then cover with a layer of cotton batting or oilcloth. A poultice should never be removed until a fresh one is made and ready to be applied. Then the old one is removed, and the part wiped dry, for the reason that the air acts as an irritant on a moist surface and causes an itching sensation. Great care must be taken after poulticing that the patient does not catch cold. When they are no longer necessary cover the spot with flannel or cotton batting for a few days.

For hot water fomentations place two or three thicknesses of flannel in a towel, and put both in a basin of hot water for a few minutes, leaving the ends of the towel out of the basin. Then twist in opposite directions till the water is all wrung out and carry to the bedside, untwist, and shake to let the air in before applying. They will then retain the heat much longer. The fomentations are then covered with flannel and rubber sheeting to keep in the heat.

Turpentine strips are made in the same way, by adding three teaspoons of turpentine to a pint of water. They are splendid to relieve pain, and if placed on the back of the neck will often relieve a severe headache.

Great care should be taken that all medicine bottles and boxes are labelled and locked away out of the reach of children. Poison should never be kept with other medicines. Never give or take a medicine of any kind without taking it to the light and reading the label very carefully. So many dreadful accidents have occurred from unintentional carelessness regarding this important rule, that we cannot be too careful. We get so accustomed to the different bottles that we are apt to think we are quite sure of them and get careless about looking every time.

Never prescribe drugs of any kind to your friends without a doctor's direction, except the simple home remedies, because a drug that may be of great benefit to one may be dangerous for another.

When giving medicine put it into a small, dainty glass, with a glass of ice water, and a piece of orange or lemon on a little tray covered with a snowy napkin. By thus making the dose attractive you will lighten the disagreeable task of taking it.

Accidental poisoning needs immediate attention to save life. The first thing to do is to send for a doctor. If you are not sure of the antidote, do not hesitate a moment but give an emetic of some kind. Mustard and salt will be found in every household and are very effective. For an adult give a dessert spoonful to every glass of lukewarm water. Make the patient drink two or three glasses no matter how she objects, and then by tickling the throat with the finger vomiting may be brought about. Repeat in ten minutes so the stomach will be thoroughly emptied. In cases of child poisoning give ipecac. instead of mustard and water; one teaspoonful every fifteen minutes until vomiting is produced. There are various antidotes to be used according to the poison that has been taken, and it is well to have a list of them on hand. Of course all these are to be given after vomiting has stopped.

For acid poisons, such as carbolic acid, nitric acid, or oxalic acid, give two or three glasses of milk and limewater or flaxseed tea. Apply heat to the extremities.

For irritant poisons such as arsenic, paris green, rough-on-rats, iodine, iron, lead, mercury, give milk, white of egg, or flour and water.

For alkaline poisons, such as ammonia, lime, saltpetre, give lemon juice or vinegar followed by castor oil.

For narcotic poisons the treatment is as follows: *Belladonna*, strong coffee or tea, stimulants and artificial respiration; *alcohol*, strong coffee or aromatic ammonia cold to the head and artificial respiration; *opium*, *laudanum* or *morphine*, give strong coffee, strychnine, alcohol. Keep the patient awake, and exercise vigorously.

Poisoned bites by a mad dog or by serpents, should be treated by having the poison sucked out of the wound, and the wound afterwards washed out with plain, warm water. The patient must be taken at once to a physician.

It is necessary to be prepared in some measure for the many unforeseen emergencies which are likely to happen in home life. In case of accident it is the greatest relief to know how to be of assistance to the sufferer and how to carry out these simple home remedies.

There are three classes of burns, and they ought to be treated according to the class to which they belong. When the skin is not broken it is called a burn of the first degree, and is best treated by covering thickly with bak-

ing soda or flour. A layer of cotton batting and a bandage should be applied to exclude the air.

Burns of the second degree are so called when the outer skin is destroyed. In such cases dry powder is not so useful as it will adhere to the injured part and become very difficult to remove. When the skin is broken it should be kept perfectly clean, and washed with carbolic solution (1 part of carbolic to 40 of water) or bicarbonate of soda, then dress with carbolized vaseline or olive oil, or if there is nothing else on hand, pure vaseline.

A burn of the third degree is so called when the tissues are completely destroyed, and it is wise to apply only a temporary dressing while awaiting the doctor's arrival. Even a burn that does not extend very deeply may be dangerous if it is at all extensive, as serious complications may follow. If there are symptoms of shock, treatment for that must be carried out immediately—before attending to the wound—as it often proves fatal.

The symptoms of shock are: Quick, weak pulse; respiration slow and shallow; surface of the body very cold, especially the extremities. Lay the patient down flat without raising the head, elevate the foot of the bed, put on plenty of blankets, and rub the body all over with hot alcohol or whiskey. Apply hot water bottles or bricks to the feet and about the legs, and a light hot water bottle over the heart. Avoid all noise or excitement, and give a spoonful of hot coffee every ten minutes. If the shock has been caused by some injury to the head, as for instance a blow or a fall, do not give alcohol stimulants of any kind, but use instead hot coffee, tea or milk.

If clothing catches fire, the person should be thrown down and rolled in a rug, shawl or blanket. Any one may at times be called to pass through sulphur flames or smoke, and it can be done by holding a wet towel or large wet handkerchief over the mouth and nose.

Fainting can be quickly overcome by laying the patient flat with the feet raised, thus sending the flow of blood back to the brain. Loosen the clothing, give plenty of fresh air, and dash a little cold water over the face. Hold ammonia or smelling salts near a patient, but not near enough to choke him. If consciousness does not return apply heat and send for a physician.

The best treatment for a sprain is real hot water. Hold the limb under running water, as hot as can be borne for about half an hour, then apply some good liniment and bandage firmly.

Hot, boiled water is also the safest and easiest remedy to apply to a bruise or cut, as it fulfils all the need of surgical cleanliness and reduces inflammation. Bathe the wound with a piece of old linen which has been boiled, and dress with sterilized linen or gauze. Styptic cotton which is made up in small boxes is very useful in dressing a cut or bruise, and will immediately stop the bleeding.

Hemorrhage from the lungs can be controlled by giving salt. Simply feed it to the patient spoonful after spoonful. Prop the patient up in bed; keep him absolutely quiet, and put an ice bag or cold cloths on the chest.

The treatment of arterial hemorrhage is to elevate the bleeding part, and make a compress of gauze or a knotted handkerchief. Tie and twist with a stick, the knotted part being over the artery, and it will stop the blood. Vinegar is also good for hemorrhage as it causes the blood to coagulate.

In all cases of infectious diseases strict isolation must be enforced for the safeguard of outsiders as well as the members of the family. Take up the carpet, remove curtains, and leave nothing in the room that would be hurt by the daily use of disinfectants, and hang over the door of the room

a sheet wrung out of a solution of one-twentieth carbolic, made by adding six teaspoons of carbolic to a pint of water; or a solution of bichloride, made by adding one tablet to a pint of water. Everything that is taken from the room should first be soaked in one of these solutions. As soon as you have received permission to remove your patient to another room, give a good hot bath, and sponge all over (including the hair) with a weak solution of bichloride. Then thoroughly clean and disinfect the room, by putting all clothing in the carbolic solution. Tear off all paper, stuff up the cracks, and burn sulphur in the room for six or eight hours. Take a pail of 1-500 bichloride and wash over everything in the room—walls, ceiling, floors, bed, and all furniture must be thoroughly gone over. Books and papers that have been in the room must be burned.

PREPARATION AND SERVING OF FOOD. Those of you who have passed through an illness will readily understand what a difference it makes at meal time if the food is well cooked and daintily served, so that it is inviting enough to create an appetite even when there is little desire to eat. One of the first suggestions I would like to make is: Never ask the patient what he or she would like to eat. The chances are that such a question will spoil the appetite altogether. A little delicacy nicely cooked, daintily served, and kept a profound secret until uncovered by the bed-side, will be received with favor and thoroughly enjoyed. Always serve *hot* food *hot*, and *cold* food as *cold* as you can make it.

To make a tray look attractive is almost as important as having the food properly cooked. Cover it with a snowy napkin, and choose the prettiest and daintiest china, glass and silverware in the house. Never crowd a tray with dishes or food, but serve everything in small quantities. Large pieces of meat swimming in greasy gravy, a plate piled with large pieces of bread and butter cut anyway, are enough to take away any patient's appetite. Serve your egg, fish, meat, etc., on a very hot plate with a sprig of parsley, or a leaf from the heart of lettuce, or even a carrot leaf, and cover with another hot plate. I have heard people say they always had the greatest curiosity to know what was under the plate.

Toast cut in "lady fingers," and also baked potatoes, look very inviting peeping from the folds of a white napkin. Cut the bread thin, in some fancy shape, have the butter very fresh and firm, and make into a fancy ball or cut into an even square and stick a little sprig of parsley on it.

Jellies are much prettier if made in small moulds and served in a dainty glass dish; fruits are best served in their own leaves, and salads are much more appetizing if served in an orange cup or in a red apple or tomato or banana or cucumber boat.

An individual teapot, sugar bowl and cream pitcher are very dainty, and give the patient a little occupation in pouring out her own tea and adding enough sugar and cream to taste.

A glass of ice water must never be forgotten, also pepper and salt. If a few flowers are put in a vase or laid loosely on the tray they add to the attractiveness of it.

Before serving the meal wipe the patient's hands and face with a damp cloth and she will be more ready to appreciate her food. If the patient is able to sit up support the back with a bed-rest and pillows. Throw a shawl over her shoulders, and pile books on each side of her to rest the tray on, if you are not fortunate enough to have an invalid's table. Unless you have something jolly and interesting to say take up a book and read some bright little extract. Take the dishes away immediately the meal is ended, brush all crumbs from the bed, allow your patient to lie quietly while you get your

own meal, and the chances are that on your return you will find her sleeping comfortably.

After all, common sense, tact, kindness and love are our best guides, and we all have to learn in the school of experience. As George Eliot says, "A supreme love, a motive that gives a sublime rhythm to a woman's life, and exalts habit into partnership with the soul's highest needs is not to be had where and how she will; to know that high initiation she must tread where it is hard to tread and feel the chill air and watch through darkness. It is not true that love makes all things easy: it makes us choose what is difficult."

THE USE OF BLISTERS AND PLASTERS.

BY DR. W. R. WATSON, BURLINGTON.

The first questions that naturally arise are: "What are blisters and plasters? What are they used for? When should they be used? How long should they be applied? When should they not be applied?"

The proper term for such applications is counter-irritants, which may be divided into three classes. (1) Those which cause redness and heat of the parts to which they are applied, such as hot water, mustard and its preparations, ammonia and its preparations, the confined vapor of chloroform, ether and alcohol. All volatile oils, such as turpentine, camphor, menthol, and iodine, carefully applied. (2) Those which draw a blister. Under this heading are included, cantharides or Spanish fly; ammonia long applied or confined; oil or compound liniment of mustard and scalding water. (3) Those which produce a crop of pimples. They are a small group, including croton oil, Tartar emetic and ipecacuanha, nitrate of silver, commonly called caustic in strong solution.

When a counter-irritant is applied to the skin, the first effect is that it reddens it and stimulates it. The blood vessels of the skin are dilated by the direct action on their nerves, and the local circulation becomes more free; whilst the irritation of the nerves of the skin causes pain of a hot, burning character. The action of the heart is quickened, the vessels of the skin generally reflexly contracted, the blood pressure rises, the temperature is elevated, and the breathing slowed. The highest nerve centres are also roused by the painful impression, perception, consciousness, and the emotions are variously distributed. A deadening of the sensation of the nerves of the skin is produced; the nerves are depressed; pain is relieved, excepting that caused by the application itself.

Prolonged application is generally required to induce the second degree of counter-irritation, viz.: blistering. The reddened area now becomes inflamed. The watery part of the blood escapes through the walls of the blood vessels followed by the blood cells; the upper or outer layer of the skin is raised, and a vesicle or blister is formed containing a quantity of fluid.

The previous deadened condition of the nerves is now replaced by considerable pain of a local character, which, if intense, may depress the action of the internal organs such as the heart, making it weaker and slower, lowering the pulse, further slowing the respiration, lowering the temperature and diminishing nervous energy.

The third degree of counter-irritation—pustulation—is different in kind from vesication, as well as being more severe. The result is not uniform

inflammation, but a crop of painful, angry pimples or pustules which are very slow to heal. The remote effects are the same as before, but greater.

The doctrine of counter-irritation may be said to be that when a part at some distance beneath the surface of the body, such as a joint, or remote from it such as the lungs, is in a condition of inflammation, pain, unnatural activity or overgrowth, an alterative effect may be produced upon its nutrition, by altering the condition of an area of the skin superficial to it or even at a distance from it. A second or counter seat of irritation is set up to relieve the deeper and more vital part of it. Now we may conclude that counter-irritants or blisters will afford relief to the circulation of parts beneath it, in immediate connection with it, by means of blood vessels, in attracting the blood and draining off its watery constituents. To the same extent the general circulation will be depressed and visceral congestion or inflammation will be diminished. At the same time the heart will be relieved.

All that remains to be done here is to enumerate the chief morbid conditions which may be treated by counter-irritation. These are (1) Chronic inflammation, with or without unnatural growth of parts in direct connection by blood vessels with the skin as of a joint or bone. (2) Congestion or inflammation in neighboring organs of the body, as of the lungs. (3) Pain in deep or distant parts, such as neuralgia, or connected with the heart or kidneys. (4) Spasm or other morbid activity in deep muscular structures, such as lumbago or vomiting. (5) Central nervous disturbances, such as fainting and hysteria.

I think the first question has been answered in this classification and explanation. The other questions may be answered by a few illustrations. Suppose a person has been exposed to cold or inclemency of the weather too long, what happens? The effect of the exposure is to chill the surface of the body, and as a natural sequence the superficial blood vessels are contracted by the effects of the cold; the blood is drawn to the interior of the body, and the internal organs, such as the lungs, kidneys and liver, become engorged with blood and are congested—the first stage of inflammation. Then it would naturally follow that by applying some counter-irritant such as mustard, or heat such as hot water bottles or poultices, the superficial blood vessels are relaxed to their normal calibre, and the blood flows easily and naturally, and fever and pain are reduced.

Again, suppose a person has pain, swelling and heat in joint as a product of injury or rheumatism, or something else; as a consequence of the inflammation, fluid escapes from the blood vessels into and around that joint till it is swollen and red. The nerves around the joint are pressed upon by the fluid and irritated till severe pain is produced. By applying a counter-irritant the blood is taken away from that part, and the swelling and pain subside. For the same reason a counter-irritant may be applied to distant parts of the body from those affected, such as the feet to relieve a congested brain, or lung, or kidney. By dilating the vessels in a distant part of the body the blood is drawn away from the part that is congested or inflamed. For the same reason hot fomentations, or poultices, dilate the superficial vessels in inflammation and relieve the congestion.

Counter-irritants should not be applied where there is already acute superficial inflammation, as they would only tend to increase the trouble.

BANDAGES, AND WHAT TO MAKE THEM OF.

BY MRS. GUNDRY, GODERICH.

Old household linen makes very good bandages, and, short of being rotten, the older the material the more comfortable it will be. Unbleached muslin or factory cotton is mostly used for making the hard roller, the triangular, the T, or the many-tailed bandage. Cheese cloth makes a nice soft bandage to use when dressings are to be kept in place, but no pressure required.

A simple triangular bandage may be used with advantage in cases of emergency, or for keeping in position such applications as poultices and compresses or dressing where a uniform support is of no moment. This bandage is easily made. When folded up into a cravat it can be used as a constrictor on a limb where there is profuse bleeding. For fracture of the small bones in the arm it can be made into a sling to support the forearm. The ends of the bandage should be tied around the neck so that the hand will be higher than the elbow. If the long bone in the arm is broken use the sling to support the hand and wrist only; keeping the hand at an angle below the elbow. This makes the forearm act as an extension and keeps the bone in a better position.

For a wound in the head put a triangular bandage on as a cap. Start in the centre of the forehead, bring the long ends low down and cross at the back of the head, then back to the forehead and pin. The third end is folded over the long ends where they cross, and pinned. This makes a good cap and cannot be easily pulled off.

For the shoulder and axilla, fold the bandage like a cravat, bring from the underarm, cross on the shoulder, and carry over the chest—one end before and one end opposite to the axilla, where they are tied or pinned.

The T bandage, and the many-tailed ones, are prepared from pieces of muslin of different lengths and widths, torn from both ends into two, three or more tails, up to within about three inches of the centre; the length and width being regulated according to their application. They may be used to hold temporary dressings in place for a fractured jaw, shoulder bone, or on the chin, head and abdomen.

The hard roller bandage is the hardest to make and also to put on. Usually they are made of unbleached muslin from four to six yards long and two to four inches wide. They should always be torn and the selvedge removed, then rolled into a hard, even roll.

In applying the common hard roller one must learn how to distribute the pressure evenly about the limb so as to give the firmness and support required. Begin at the lower extremity of the limb and bandage upward. Keep the bandage rolled up in your hand to within about three inches of the part; use the finger and thumb of your left hand to keep it in place when applying. This requires some practice, but it is easily learned.

Flannel bandages are cut on the bias of the goods and evenly rolled. They are easily put on, and are used in cases of swelling of the limbs, and also under plaster paris casts to protect the skin.

Plaster bandages are not often called for in a home. They are made of crinoline cut into strips about five yards long and four inches wide. Plaster is rubbed into the meshes. To do this lay the bandage over the table, **rub in the plaster** with the left hand, and roll loosely with the right. Wrap each bandage in paper and keep in an air-tight can until needed.

Crinoline or mosquito netting bandages are used when a slight stiffness is required. Just before using they are wrung out of water. This helps the stiffening, and the bandage is very light.

TUBERCULOSIS, OR CONSUMPTION.

BY DR. M. J. GLASS, POPLAR HILL.

Tuberculosis or consumption is an infective disease characterized by bodies called tubercles, or inflammation of tuberculous portions of the body, which may break down, ulcerate, or sometimes become hardened.

The disease exists in all countries. It prevails more in large cities, and wherever population is massed and crowded together. Towards the poles it is rare. Most people imagine the cold atmosphere of winter weather very detrimental to consumptives, but this depends altogether on circumstances. In the high regions of the Alps and Andes, and in the central plateau of Mexico, and some parts of South-Western United States, the disease is very rare. Mountainous countries such as Switzerland have a very low death rate from tuberculosis.

To Koch, the great German scientist and investigator, belongs the credit of demonstrating the existence of the bacillus of tubercle and its invariable association with the disease. The investigations which had previously been made upon anthrax, etc., by perfecting the methods of research paved the way for this brilliant discovery. It is now about twenty years since the renowned Koch presented it to the world. His demonstration was so thorough that nothing has been added to it since then. It is a plain, simple, almost self-evident fact.

This bacillus is a short, fine rod, often slightly bent or curved, seen only under the microscope by a high power, and appears like a row of beads. It has such peculiar staining power that it can be distinguished by that means from all other known bacteria. Like spores, bacteria, etc., it can be cultivated on blood, potatoes, etc. So powerful is the activity of these little bodies, that at the end of an indefinite series of cultures, material from one of them inoculated into an animal will produce the disease. Patients with advanced pulmonary tuberculosis throw off in the expectoration countless millions of the bacilli daily. When expectorated and allowed to dry, the sputum becoming dust is distributed far and wide. Observations have been made along this line which are at once an instruction and a warning. Dust has been taken from walls, floors and clothing, by way of experiment, and its virulence established beyond all doubt by inoculation. Dust taken even from wards for consumptive patients in our hospitals may, however, be entirely free, if the necessary care be taken by the patients with the sputa.

MODES OF TRANSMISSION.

(1) *By heredity.* This point is disputed by some observers. Direct transmission may not be so frequent, yet the fact remains that certain characteristics of constitution are certainly transmitted which may be called the prepared ground at least for its development in later life. And let me say that maternal are more susceptible than paternal inheritances.

(2) *By inoculation.* When it occurs by this means the disease usually remains localized. Demonstrators of anatomy, butchers, and undertakers,

are subjects of a local tubercle of the skin, which sometimes is seen as a reddened mass of raw tissue on the hands and fingers. Other means, such as the wearing of another's earrings, washing the clothes of tuberculous patients, the bites of tuberculous animals, are known. Inoculation plays a small part in the transmission of the disease.

(3) *By inhalation.* By this means the most prolific source of infection is seen. The expired air of itself of a phthisical person is non-infective; the danger lies in the particles coughed up and expectorated.

(4) *By milk.* The milk of an animal suffering from tuberculosis may contain the virus and be capable of communicating the disease. One instance is recorded by a German investigator, where the owner of a herd known to be tuberculous, withdrew his milk from the market and used it without boiling to fatten his hogs. The whole lot of hogs without exception became infected and had to be slaughtered. Butter, too, may be contaminated in the same manner.

(5) *By meat.* On this point there is a difference of opinion. This may be partly owing to the fact that most people eat cooked meat.

CONDITION INFLUENCING INFECTION.

(1) Constitutional peculiarities: Two types may be distinguished. First, "the tuberculous with thin skin, bright eyes, oval face, and long, thin bones;" second, "the scrofulous," with thick lips and nose, dark skin, thick bones and heavy figure. These types, however, only indicate a certain delicacy of constitution, which it is well to fortify.

(2) Soil and locality each have their effect.

(3) Catarrhal inflammation of the nose, throat, and chest predispose to the disease. Such conditions are prepared ground, as it were, on which tubercle finds its happy resting place. How often is it said that the disease has started in a neglected cold, and so it often does.

(4) Certain occupations may be said to render the lung tissues susceptible, such as those in which the workers do not get plenty of fresh air, and those who work in a dusty atmosphere. Of these may be noted: stone-cutters, miners, file cutters, glass workers.

(5) Specific fevers render the tissues weaker and are sometimes followed by the disease. Of these, measles and whooping cough may be mentioned.

Next to the germ, a body or a constitution with a low resisting power, however brought about: whether congenital or acquired, as the result of circumstances which depress—such as bad air, bad food and imperfect hygienic surroundings—is the most important factor in the causation of the disease.

The organs of the body are variously affected by tuberculosis. In adults the lungs are most frequently affected; in children, the glands, bones and joints. It may, therefore, attack the lungs, brain, liver, kidneys, heart. The kidneys are a common seat.

Once formed a tuberculous tissue either breaks down, as we see in sputa, or becomes a firm, hard mass. The first is destructive; the latter conservative and healing. The ultimate result in any case depends upon the ability of the body to resist and limit the growth of the bacilli. There are tissue soils in which the bacilli are killed at once; others in which more or less damage is done; and again others in which the bacilli grow luxuriantly. The action of the bacilli injected into the blood vessels illustrates many points. If into the vein of a rabbit a pure culture is injected, the microbes accumulate in the liver and spleen chiefly, and the animal dies within two

weeks. If a more dilute culture be used the animal may survive for five or six weeks.

In practice the cases may be divided into (1) those with symptoms of acute general infection, without specially attacking any particular part of the body; (2) those with pulmonary symptoms; (3) cases with brain or brain and spinal symptoms combined.

In the first type the patient presents the symptoms of an infectious disease, with perhaps no local manifestations. Such cases are frequently mistaken for typhoid fever. After a period of failing health, with loss of appetite, the patient becomes feverish and weak, until later on more definite symptoms develop. In the cerebral or brain type it is quite commonly known as "water on the brain," and is most frequently met with in children. This, too, is often a very difficult form to determine definitely in its early stages.

Many of you may be surprised to know that scrofula is very suspicious of tubercle. How very often we see scrofulous glands breaking down, and finally the system becoming tuberculous as a result. On the other hand it has been urged that scrofula in children gives a sort of protection against tuberculosis in adult life. We certainly do meet with just such cases. Those "little kernels" in the neck need looking after nevertheless.

Galloping consumption is a particularly distressing picture. Osler (to whom I am largely indebted in this essay), in his work on "Medicine," gives an instance. A cab driver, who had been kept driving on a cold, blustering night until three o'clock in the morning, was seized the next afternoon with a violent chill, and five days after a clinical lecture was given to the physicians in attendance at the great Johns Hopkins Hospital in Baltimore. The case presented every feature of a simple case of pneumonia in its history, symptoms and signs. It was not until ten days after that bacilli was discovered in the sputa by microscopical examination and the true nature of the case became apparent.

Cases differ so largely in their symptoms that we may or may not have pain, or sputa, and occasionally very little cough or shortness of breath. Sometimes "bleeding" from the lungs ushers in the disease as it were, and then for the first time is advice and treatment sought for. Fever, however, is a constant accompaniment. Night sweats, quickened pulse, and general wasting sooner or later occur in most cases. To give you a picture of the disease as it affects the various organs would only weary your patience.

In the way of prevention, and aside from the individual altogether, the Government has made some advances. The possibility of the transmission of tuberculosis by infected milk having been fully demonstrated, the local health authorities are given power to provide for veterinary inspection of dairies, etc. The tuberculin test weeds out the diseased animals very quickly. The time may come when the placing of tuberculosis on the list of diseases of which notice must be given, and even placarding will be made compulsory, as is the case in smallpox, diphtheria, etc. The hardships entailed upon individuals by such a procedure would be trifling in comparison with the public good which would follow the adoption of measures of inspection and disinfection controlled by our Boards of Health.

So far as the individual is personally concerned, commencing with infancy it may be said that a mother with tuberculosis should on no account nurse her child. An infant born of tuberculous parents or a family in which consumption prevails, should be reared with the greatest care and guarded most particularly against catarrhal affections of nose, throat and lungs. The child should be clad in flannel most of the year, and live an outdoor life as much as possible, avoiding close rooms. Meals should be at regular

hours, and the food plain and substantial. Milk should be drunk freely. Unfortunately, however, children seem averse to fats and oils. They should not be sent to school at too early an age, say not before the seventh year, so that their little bodies may be in a condition to withstand the confinement and never-ending pressure which is put upon their yet tender intellects.

The sum and substance of preventive measures so far as adults are concerned, consists in disinfection and isolation. By disinfection is meant absolute cleanliness with clothing and apartments. Consumptives should spit in some kind of cheap cuspidor which may be burned. All sputa should be burned. On no account should cloths be used. If absolute necessity arise for their use they should be at once destroyed in the fire. The floors, furniture, etc., of their sleeping and living rooms should be gone over with a wet cloth quite frequently. The sputa being the germ carrier, every intelligent person can see the force of legislative measures in reference thereto. It is for these reasons that isolation is so beneficial not so much to the patient as to the friends and family. Sanatoria are being established in nearly all lands, to which those in the early stages are admitted. Our Sanitorium at Gravenhurst is doing a great work. Being dependent to a large extent upon donations its scope is necessarily limited to the funds subscribed. In a letter from the Medical Superintendent of that institution, which I received lately, the wish was expressed that mention should be made of their great needs in this address, so that any one who felt inclined to help some poor soul to new life might render some assistance.

The Superintendent, in speaking of treatment, says it consists in making patients lead an outdoor life night and day. Patients soon find that what hardship there is in it is quite well worth while. Six hours a day outside are prescribed. The windows of the institution are always open, being adjusted at night to the temperature outside. To those who are not actually cured or their disease arrested benefit accrues. They learn a great deal about caring for themselves, what not to do, how to protect their families and friends, and prove centres of sanitary information in their communities. Many of those who leave the Sanitorium build for themselves at their own homes what are called "shacks." These are placed in the open, a double-boarded floor, a shingled roof, and canvas for outside walls, with an air space between. To many this may seem an extreme measure and not tolerable. Patients soon become accustomed to it, like the individual who takes a cold shower or sponge bath every morning, and prefer that with better health than sleeping in stuffy, ill-ventilated bedrooms in the house. Why not adopt some such scheme in private life?

Our school inspectors are taking up the more thorough ventilation of our school houses, especially during the winter months, and great benefit must arise therefrom in a more healthy new generation. Such attention will prove a potent educational factor. This will manifest itself in the new homes about to be built by those who follow in our footsteps.

To a subject of such vital importance to every one, more time could be profitably used in discussing it. My paper is necessarily crude owing to hurried preparation. Let me in conclusion express the hope that many lives may be spared by such discussions as these. Too many are suffering for want of knowledge of the care of themselves and those around them.

HINTS ON THE HYGIENE AND CARE OF INFANTS AND YOUNG CHILDREN.

BY MRS. A. E. DUNBRACK, BONDVILLE, QUE.

THE WARDROBE.

The wardrobe for the newcomer need not be elaborate nor large, but it is wise to have an ample supply of the most necessary articles.

If one is capable and able to do her sewing without discomfort, the expense will not be as great as if it were put into the hands of a seamstress, or even bought already made. The latter way of getting them is in reality the cheaper of the two.

For the "first clothes" (the long clothes) which are only worn for about three months, the under-garments and night robes are best if made as plainly as possible. I mean by this to put some trimming on if desired, but to save the extra trimming and ruchings for the first lot of "short clothes."

A young infant requires a greater number of changes than one in short clothes, and this necessitates a vast amount of washing and ironing, which tend to wear out delicate fabrics, laces, etc.

I think the dresses for the mornings should be less elaborate than the few spare ones that we are apt to make and have for afternoon wear.

White is the only thing to use on young children. It soils easily, but it can be boiled, and the bleaching keeps it in better condition.

The following will give one an idea of the quantity which it would be necessary to provide:

3 Bands.	2 Wrappers.	1 Shawl.
4 Shirts.	48 Napkins.	Socks or bootees.
6 Petticoats.	4 Rubber Napkins.	Hood.
8 Dresses.	3 Jackets.	Cloak.
6 Nightslips.	3 Foot blankets.	

Bands. These are only required for a week or two to keep the dressing in place. Three strips of unshrinkable flannel about seven inches wide, with the torn edges, are better than the knitted ones so much used by mothers. The latter are hard to keep in place. Five-eighths of a yard of flannel will cut three bands, cutting it crosswise and allowing the width for the length.

Shirts. There are different makes to be had, but the most convenient are opened and fastened down the front. They are more easily put on and taken off than the ones only partly open. The ones made of part wool and part cotton do not shrink as much as those of all wool, and seem just as warm. The white ribbed cashmere, high neck and long sleeves are the best for winter wear. They cost from forty-five cents to seventy-five cents each, and the better quality wear very well.

In putting on a shirt, if one chooses to have it so, it can be fastened behind, and in so doing the garments can be placed one inside the other and put on as one. Fasten it with a safety pin to the napkin in front to keep it from slipping up.

If one cannot afford to buy these undervests, they can get one of the desired style and use as a pattern, and cut the remaining ones out of cotton and wool and bind with flannel binding. The seams should be laid flat and cat-stitched. The cotton and wool costs about thirty-five cents a yard. The

silk and wool ranges from sixty-five cents to one dollar a yard. On young infants the shirt should be worn night and day and a separate one for each service should be provided.

Petticoats. In the modern outfit these are made in two ways. The skirt is gathered on to a waist which is cut low in the neck and made without sleeves, buttoning in the back. The other way varies little, the only change being the fastening of the garment on the shoulders. The latter is more convenient. The hand can pass up under the dress and unbutton it and slip the skirt off and place another one without having to undress the little one.

Napkins. There are different materials for this purpose. Some are more expensive than others. There is a cotton diaper cloth that comes in different widths, 18 inches, 24 inches and 27 inches. It costs from sixty-five cents up for ten yards, and is more absorbent than the linen diaper. Swansdown, canton flannel or white shaker are really better as they are thicker, and do not necessitate the use of so many. It is necessary to have two or three sizes. One dozen of the smallest is all that is necessary.

Night Slips. These can be made either with or without a yoke and of white shaker or long cloth. The ones having the fullness at the neck could be finished with a narrow band or with a casing through which a piece of bobbin cord can be run. There is less danger of having the garment uncomfortable round the neck if the latter model is used.

In either case the edge can be trimmed with a piece of lace and the bottom of the slip can be finished with a few tucks or feather stitching above the hem.

Dresses. These can be made to suit one's own taste. The best material for ordinary wear is a fine Egyptian longcloth. It is soft and close and launders well. The India lawn or linen or nainsook make good wearing materials for the better ones. They should be made quite loose so as to be easily slipped off and on.

Wrappers. These are very necessary to have, especially when the room is cool, or for putting on the baby when it is first taken from its crib or bassinette in the morning. They are usually made of something warm, such as French or opera flannel, or a good shaker. The more delicate the colorings and smaller the pattern, the more appropriate for an infant. They may be made with or without a yoke. In the first place the wrapper will resemble a Mother Hubbard dress opening down the front. The other model I think is more easily made and looks simpler. Allow enough back and front to lay a few plaits and feather stitch them down, forming a yoke in this way. A roll collar trimmed to match the rest of the garment is all that is necessary about the neck. The sleeves should be made with considerable fullness, and should be gathered into a band, or on a tape at the wrist.

Rubber Napkins. Some advocate the use of these and others do not. No harm comes from them if there is a sufficient number of them to keep a fresh one in use, and if they are properly cared for. They should be changed and washed often. When washing place them on a hard surface, rubber side down and with a brush kept for the purpose, and soap and water, scrub the other side, then rinse under water. In doing this immerse them and let the water drain off. Do not crumple them between the hands, as in so doing the rubber is easily cracked and will in time wear off. One-half rubber sheeting, such as is used in hospitals, will cut four napkins by folding and cutting two squares exactly eighteen inches, and folding each square cornerwise and cutting in two, making four triangles. Round each corner and place a button on one corner and button holes in the other two.

Socks. These are a necessity, as the custom of pinning the feet up in a foot blanket has gone out of practice to a great extent. There cannot be too many of these little things. They are easily crocheted, and with care and the use of castile soap and borax, they will keep white for a reasonable length of time. All white is the most desirable, as the delicate colorings fade with so much washing.

Foot Blankets. The most modern model for these garments is that which cuts the back and front alike, save the shape of the armhole and neck. They are cut low in the neck and large in the arm-hole, and sleeveless. There is no fulness about the body part at all. The sides under the arms are cut with a flare, giving width to the bottom of the skirt. For night wear a white shaker makes the most serviceable ones. They are made with a hem at the bottom and finished in any desirable way, and look neat and daintier than colored shaker or flannel. The advantage the white has over the other materials is that it can be boiled and kept white. Flannel turns yellow if washed frequently.

Length of Robes, etc. Thirty inches is long enough for the long clothes to be made.

Jackets. These are made of a number of materials. Some are crocheted, and look pretty while new, but lose their daintiness when once washed. It is wise to have a number made of delicately patterned or striped French flannel or cashmere for ordinary wear. These hold their own better than either silk or crocheted ones.

Cloak. This can be made of either eider flannel, silk, cashmere or Bedford cord. In winter it is best to line it with something heavy, such as canton flannel. For summer wear a light lining to match the material of either percale or sateen is all that is necessary.

Hoods. Pretty hoods made of either cashmere embroidered, silk embroidered or crocheted, lined with silk, can be purchased at almost any dry goods store at a comparatively small sum. They are difficult to make and there is very little saving in so doing.

BASSINETTE OR CRIB.

In addition to this there are the fixings for the bassinette or crib. For winter use the sheets can be made of a heavy white shaker, with three-inch or one-inch hems. A row of feather-stitching adds to the daintiness.

If a basket is to be used, pad it well on the sides before lining. If color is desired under these draperies, it should be securely fastened over the padding before the latter is attached. Spotted net or muslin or white tulle, or even plain muslin make pretty and washable coverings. Arrange it so that it may be taken off conveniently and put on again, to allow of washing frequently. In carrying the basket from one room to another, the draperies become somewhat soiled, and need to be freshened often. A pillow the size of the basket should be placed in the bottom, over which lay a piece of rubber sheeting, then a piece of flannel blanket, and then will follow shaker sheets, blankets and comfortables, all large enough to allow of tucking under on all sides.

In a wardrobe of this kind, the addition of sachet among the clothes gives them a delicate and not overpowering scent. Violet is as nice as any and can be bought put up in tin boxes with a tight cover which prevents it from losing its strength.

A laundry bag or hamper make good receptacles for the soiled clothes, a separate one being provided for the napkins.

BASKET AND ITS CONTENTS.

This can be made of a basket of any shape preferred. One which is about five or six inches deep, and about twenty inches long and ten inches wide is a good size. This can be draped daintily with a color underneath the white, and with the addition of lace and tasty ribbon.

The list of articles should include different sizes of safety pins, a soft brush, small fine comb, two or three soft linen towels, soft wash cloths, a cake of good toilet soap in a celluloid or silver box; good toilet powder in puff box, a small bottle of vaseline or cuticura, a roll of soft white flannel, a few pieces of old linen, a twisted cord made of linen thread, a small pair of scissors, oil-silk bag, and a sponge, all that is necessary for the dressing of the little one, and a lap-pad.

THE NURSING BOTTLE.

The best and most convenient kind to use are those having no tubes, simply two plain bottles and half a dozen rubber tops.

Put in the bottle only such quantity of food as will be drunk at one feeding at a time. When empty rinse immediately in tepid water, and wash with hot water containing a small quantity of baking soda or borax. Use a brush for this purpose. They can be bought at any druggist's and are an essential if we are to have clean bottles. After washing, rinse thoroughly in hot water and put on end to drain. The rubber top should be turned inside out and treated in the same manner. They should be allowed to lie in fresh water when not in use.

The child should be placed comfortably on its side in its crib, and the mother sit by it and hold the bottle at such an angle that the top is kept filled with milk. Otherwise air is apt to get into the rubber top, and colic will be the result.

After a meal the child should lie on its right side, and in about one hour it should be turned over on its left. In young children the liver is disproportionately large, and if it is allowed to press on the stomach, the digestive organs are interfered with.

INFANT'S FOOD.

If by some misfortune the mother cannot nurse her child, she must then provide a food that will nourish it and agree with its stomach.

The following is an excellent recipe and can be used till the child is two and a half years old. When the child has given up using the bottle, the food can be used instead of plain milk.

Child under 3 months old. Pinch of gelatine, 1 cup water, 1 cup milk, $\frac{1}{2}$ teaspoon arrowroot, 2 tablespoons cream, salt, sugar.

3 months old. Gelatine, $\frac{3}{4}$ cup water, $1\frac{1}{2}$ cup milk, $\frac{1}{2}$ teaspoon arrowroot, 3 tablespoons cream, salt, sugar.

6 months old. Gelatine, $\frac{1}{2}$ cup water, $1\frac{1}{2}$ cup milk, $\frac{1}{2}$ teaspoon arrowroot, 4 tablespoons cream, salt, sugar.

1 year old. Gelatine, $\frac{1}{4}$ cup water, $1\frac{3}{4}$ cup milk, $\frac{1}{2}$ teaspoon arrowroot, $\frac{1}{2}$ cup cream, salt, sugar.

Over one year old. Gelatine, 2 cups milk, $\frac{1}{2}$ teaspoon arrowroot, $\frac{1}{2}$ cup cream, salt, sugar.

Soak gelatine in cold water about one hour. Put water on to boil. Dissolve arrowroot in cold milk and add to boiling water, stirring constantly.

Let all boil hard for one minute. Set on back of range and let simmer ten minutes. Before removing from range add sugar, salt and cream.

In the recipe given for a child over one year old the water is omitted and the quantity of milk increased. In this case it will be necessary to dissolve the gelatine in $\frac{1}{4}$ cup of milk, and proceed as if it were water being used.

Water. Children often crave water and it is an essential to good health. Unless they have sufficient water their digestive organs are apt to trouble them. A young baby should have two or three teaspoonsfuls each day.

Lime-Water. This can be prepared at home, and should be on hand in case of the food disagreeing with the child. One-half teaspoonful of lime-water added to the quantity of food necessary for one feeding will help in digesting it, and tends to sweeten the stomach.

Take a lump of lime as large as a good sized plum and put it in a bottle with one quart of cold water which has been boiled. Shake the bottle well until the lime is dissolved, and let it stand twenty-four hours before using. Filter into another bottle. Water can only absorb a certain quantity of lime, so there is no fear of it being too strong.

Potatoes. These are food for children after they have been weaned from nursing or the bottle, which should not be later than a year old. Baked potatoes is the best way to prepare them as the potash salts are lost when they are pared and boiled. A little salt and a dessertspoonful of cream should be added.

Eggs. When a baby has passed its first birthday it may be allowed to have eggs prepared in the most digestible ways. One every day or every other day may be given, either boiled, poached, scrambled or stirred.

Junket. Junket is much better for a child of one year and upwards than either custards or puddings. Directions for making it: Put into a bowl a teaspoonful of wine of rennet and one of sugar. Pour upon these a pint of lukewarm milk, and stir a minute to ensure thorough mixing. Put in a cool place till set. If eaten with cream it will be relished. A few gratings of nutmeg add to the flavor.

Oranges. The juice of an orange may be given every day between the meals of milk. If given early in the morning it is an excellent laxative.

Apples. The soft part of a baked apple is nutritious and very much enjoyed by children. It should not be given with too much sugar.

Other Fruits. These should not be given to children until they are two years old. They should then be encouraged to eat plenty of fresh fruit and green vegetables as they form a very important part of the diet.

Meat. Until a child is two and one-half years of age meat should not be given it except in the form of broth or soup. It may then be given once a day in small quantity.

Porridge of various cereals, eggs, delicate vegetables and fruit should take the place of meat till they may be allowed to have it.

Cooking of meats. In cooking meats the following rules should be observed:

Beef should be cooked rare.

Mutton and Chicken well done.

The meats to be avoided are veal, pork, salt meat, as ham, and the internal organs, such as liver, kidneys, sweet breads, etc.

Avoid frying meats. It is an indigestible way of cooking them.

NECESSITY OF SLEEP.

Children need plenty of sleep, and until a child is one and one-half years old it should have a long nap during the day, between the hours of 10.30 a.m. and 1 p.m. being the best time. Never waken a child to give it either food or medicine.

It is a serious mistake to permit two children or a child and an elderly person to sleep in the same bed. In the latter case it will affect the vitality of the child, and if children sleep together the weaker will suffer from the contact.

CARE OF THE EYES, EARS, AND NAILS.

A young baby's eyes should not be exposed to strong light. Allow plenty of sunlight into the room but keep the little one's eyes from its direct rays.

The ear should be washed thoroughly but gently, once a day, while giving the morning bath. Use warm water and a soft cloth. If wax forms in hard pieces which do not come away naturally, do not use a hairpin or any hard small instrument. If spraying with warm water does not remove it, the wisest thing to do is to consult a physician, as there is danger in operating with this very delicate organ. The corner of the wash cloth doubled and twisted round inside the outer chamber of the ear will as a rule remove all that is intended to be removed.

In young children the ear is more sensitive than that of an adult, and should be covered and protected from the cold in winter, and thus avoid the painful suffering of earache.

If any foreign body lodges itself in the ear, do not try home treatment. Better get medical advice and save the child much suffering, and run a risk of doing harm.

The baby's nails should be cut as soon as they are long enough to require it. After washing, if dusted with toilet powder they are kept free from particles of dust getting under them and discoloring them.

Baths and Essentials.

First Bath. This should be given the little one on the nurse's lap, the temperature of the water being about 99 degrees. The skin is very tender and should be dried by patting instead of rubbing for several days. It is best not to plunge the little one into the basin or bath-tub containing the water till it is at least two weeks old. Use plenty of toilet powder after bathing to prevent chafing. The garments should be warmed before placing on the little one to prevent a chill.

Bath Tub or Basin. A wash basin will answer the purpose for the bath for the first month or six weeks. After that an ordinary foot-tub or child's bath tub can be used.

Wash Cloths, Towels, Lap-Pad. Wash cloths are preferred to sponges as they are more easily kept clean and sweet. The cloths should be very soft and made without hems. Linen table napkins that are beyond using make soft towels and cloths.

A lap-pad made of two thicknesses of canton flannel answers nicely to have on the lap when lifting the little one out of the bath. It should be at least thirty inches square.

Ailments and Simple Remedies.

For Feverishness. If at night the child's temperature has risen to 103 degrees and symptoms as sore throat, pain in the chest, etc., accompanying fever, a simple remedy such as a warm bath and a mild laxative will clear the system, and by morning if the child is not better get medical advice.

For Colic. A few drops of dill water in a tablespoon of warm water will relieve the little patient. Give it frequently, until it has the desired effect.

For Constipation. One-half teaspoon of powdered magnesia on sugar and mixed with a few drops of milk. If there is difficulty in getting the child to swallow it, if feeding with the bottle, it can be put in warm milk and be allowed to be taken in this way when the child is hungry.

For Diarrhœa. A few drops of Extracts of Wild Strawberry, or, better still, a good prescription from the doctor.

For Hiccough. The same as for colic.

For Colds. Give a gentle laxative and keep the child warm. If they are severe and affect the lungs and chest, medical advice should be sought at once.

Hot poultices on the chest and the application of camphorated oil will give relief in the latter case.

For Sore Mouth. Wash with ten drops of Listerine in one tablespoon of water every two hours.

For Sore Eyes. A weak solution of boracic acid and warm water applied every two hours will draw the inflammation out.

For Gum Boils. The application of alcohol or tincture of myrrh.

For Earache. Apply dry heat such as a hot water bottle or weak mustard plaster.

CHILDREN'S RIGHTS.

BY MISS EDITH LEWIS, BURFORD.

Probably the reason why I have been asked to write a paper on "Children's Rights," is because of my experience with children in the school room. But I consider that children are entitled to a great many rights before they enter the school room.

First and perhaps most important of all, children have a right to good and noble parentage. One writer says, "Parenthood is the supremest relation in life, and demands physical, mental and spiritual preparation, to insure to every child, its birthright of a joyful inheritance." Parents must accept and obey the law of purity before they dare hope for morality in their children. When true purity exists in the home, then, and only then, will the children go from the home with will-power that is strong enough to face the blackest temptations that darken their pathway. True morality will manifest itself in the home in various ways, all of which tell upon the development of the child's moral character. The literature, the games, the music, the conversation should be pure and enobling, such as is in harmony with the highest aspiration in life.

A member of the New York City school board says they have never yet had an unruly Jewish boy or girl in their schools to deal with. They are so beautifully trained in their home life, to obedience and respect for their elders, that they are always obedient and courteous in the school room.

People sometimes pass remarks upon the morality of our schools. If the morality of our schools is not what it should be, I do not consider that the teachers are the ones at fault. Parents should not forget that a teacher very rarely has the privilege of talking with her scholars personally. And if a child's innocence is spoiled after it enters the school, it is very often because of some one child who comes from a home where morality is not taught. And should that child seek to tell to others that which they should not know, it is never done in the presence of the teacher. The influence of one good true mother, is worth that of a hundred school teachers. I am sure that very much of the curiosity which exists among children would be done away with if mothers would but take their children into their confidence, and teach them more of the laws of purity and morality. She would thus gain the confidence of her child in all other matters that pertain to the child's interests.

Children have a right to a time of freedom, activity, and mental, as well as physical growth. Give the child a few years of freedom before he enters the school room, for he never gets it afterwards. Children are often denied their first and greatest rights—the right to grow. Before many years the school age will be raised to six; later to seven; and before the present century closes, will be fixed at eight years. The time that is now devoted to the primary classes, will be given to kindergarten work. This work will be so administered, that a child will become sturdy physically, intelligent and responsive morally, and alert and ambitious intellectually. Then we shall not see the listlessness and indifference manifest in so many children. They will be allowed to start at the beginning, go forward in the paths in which they were fitted by nature to walk, and in the end acquire that power, which natural conditions, and wholesome work, pursued according to intelligent methods, can give them.

In regard to the age at which children should enter the school, I might here say, that a little girl of seven years of age entered my school, in the spring of 1902. On account of ill health, and defective eyesight she was not promoted to the Part Second until last midsummer (1903). Having improved in health, her school work was a delight to her at all times. Her work was all so very easy to her, she understood everything as soon as it was told her. At the end of two months she was promoted to the Second Reader. With very little extra attention, she would easily have entered the Third Reader at the end of the term, but it was thought wise not to promote her too rapidly. Another child of the same age entered the school in the spring of 1903, and if health would permit, she too, would make equally as rapid advancement. Another little girl entered the school three years ago at the age of five. She is still in the tablet class, but is gaining interest in her work, and I am in hopes, will be promoted to a higher class at the conclusion of the term's work. I have had other instances where children have started to school at the age of five, and for the first year at least, would seem to make no progress whatever in their work. Not because of any fault in the child, but because their minds were not sufficiently developed to grasp the ideas presented to them.

Children have a right to sympathy and consideration from those about them. So much time is spent in pitying men and women who have burdens, and have sorrows, that no time is left to pity the little ones, who are having their burdens and sorrows also. It is often true that men and women bear no heavier burdens than children. The period of greatest sorrow to most boys and girls is perhaps about the time they are entering their teens, when the bitterness, the shattering of implicit faith, the awakening to the real

character of those who have been to them as God, the feeling of the hollowness of the world, are first breaking upon them; and all because, in that time, the children are bereft of any real sympathy from any one in the world. They are simply ignored. They are turned over to the school teacher, the dress maker, the playmate, the piano, the story-book, the servant girl, or to themselves. The fatal part is, they are left alone. Who really talks to them? Who draws them out? Who listens to their troubles, their heart-aches, and sorrows over failures? Who strengthens them with sympathy, and with counsel, that is wise, because it is preceded with feeling? There is no surer way to dwarf a child's nature, than to reiterate in his hearing, after every little failure, in school or in life, that he is a dunce, and will never amount to anything. Keep drumming this into the child's ears, and you will destroy his confidence in himself—that which is absolutely essential to his success in life. In time you will make him just what you have been insisting that he was.

Perhaps you may think your child very unmanageable. Did you ever think that perhaps your child finds his parents very difficult and unmanageable? Without doubt your child is contending with difficulties as well as you. It may be lack of sympathy, impatience, irritability, or want of self-control on your part. I read of a mother who once learned a life-long lesson from her little three-year-old son. When after a particularly difficult day for both mother and son, bed-time came, the mother said, "My son, if I were you, I would ask God to give me a better temper to-morrow." So the little fellow knelt down and said, "Please, God, give me a better temper to-morrow, and while you are about it, you might give mamma one too."

Another right of children is a right to have pets. Each mother should strive to instil into her child a love for pets. Children should be allowed to possess, and be taught to be kind to, cats, dogs, birds, chickens, horses, cows, rabbits, etc., anything and everything, that your purse and space will allow. There is a great moral influence underlying this. Superintendents of penitentiaries say they have never had in their care a murderer who was fond of pets in youth. In learning to be kind to dumb creatures they learn kindness and gentleness towards one another.

Last, but by no means least important of all, a child has a right to religious training. An enduring corner-stone to a religious life, is laid by that mother who carefully instils in the mind of her child, a reverence for the name of God. The daily life of the home has much to do with the formation of a religious nature in a child. As the child matures the ingenuity of the parent may have to be exercised to keep the child, especially a boy, interested in Christian work. The best way to do this, is to give him responsibility. Without exception, he should join the junior department of the Sunday School, and whatever other Christian associations may be in his town. Then he should be trained to save or earn, each year, a certain amount to be devoted absolutely to Christian work. Finally and above all, parents must remember that upon them alone depends the development of the religious nature of their children. It means the price of eternal care and study, but the reward will be great.

VENTILATION AND SANITATION.

BY MISS MARY BELL, ST. GEORGE.

"For life is not to live, but to be well," said Martial, who lived in the first century. Herbert Spencer has defined life as "the continuous adjustment of internal relations to external relations," and health is the expression of this response to environment. Health being, therefore, a relative term, its measure varies, within limits, according to the physical and chemical influences surrounding us.

The education of a vast community is perhaps the most difficult task that falls to sanitarians. Nevertheless, however far it falls short of its realization, it is a labor worthy of the many workers contributing to its accomplishment. A great deal depends on us individually how speedily this will be brought about. We must remember that "to cure" was the voice of the past; "to prevent" is that of to-day.

We should earnestly endeavor to prevent unsanitary conditions—to preserve health by the removal of all decomposition collected around the house. For instance, in the spring there is usually found in our cellars a collection of waste material such as old vegetables. In the cold weather there is not so much danger in having this lie around if our cellars are properly ventilated, but when we see the first sign of spring we should promptly remove all this, if we have allowed it to collect at all. Leaving the cleaning of our cellars until late in the spring is one of the most prevalent sources of disease.

Another thing which should be attended to is the ventilation of cellars in winter. A great many people think that if they are cold they are perfectly sanitary. Such is not the case, as fresh air should be admitted to this part of the house as well as to the living rooms. Cellars should be kept free from dampness, as it will strike up into the house. This is a matter which should be dealt with in the building and drainage of a house. Except in houses of recent construction, dryness of foundation seems to be wholly a matter of accident. If the soil be sandy or gravelly, the cellar is likely to be dry; if clay, unless properly treated, it will be damp and sometimes even wet. It will be seen that the problem of keeping a house in a sanitary condition can be reduced to the problem of ventilation and cleanliness.

"The adoption of some artificial or mechanical means for the purpose of introducing fresh air into dwellings, is commonly termed ventilation, and depends upon some method whereby the air of a room may be removed and replaced by outside air." The chief difficulty lies in the fact that the individual recognizes no visible difference between indoor air and outdoor air.

Most people are conscious, on entering a closed room, of what they call a closeness, but this is conceded unavoidable. It is a fact that pure air in an unventilated room, of which the dimensions are 20 by 15 by 10 feet, will be made foul in one hour by the habitation of one person. One of the effects of bad air is the discomfort occasioned to those who are not habituated to its use. The examination of indoor air has for some years been carried on, and much valuable information been obtained regarding it.

Indoor air contains more carbonic acid gas than normal outdoor air, so perfect ventilation has been secured only when every person in the house takes into his lungs air of the same composition as that surrounding the building, and at the same time feels no draught. In summer we have fresh air in abundance because our houses are open. In the cold weather, on the

contrary, our efforts are directed to securing warm air, but we do not provide for a sufficient access of *pure* air. There may be two reasons for this: First, we think we are more economical with fuel by keeping a room closed, (whereas it is very hard to heat impure air) second, we rarely provide for the outlet of impure air, and consequently cannot expect the entrance of pure air. It is therefore necessary to have two openings. The warmed air may be introduced through an opening high in the room, and allowed to escape at the floor.

During the day there is much less danger of persons suffering from want of fresh air than during the night. The lack of pure air is one cause for the tired, listless feeling we often have in the morning. The window should be left open at the top, and also a transom over the door to admit some heated air. Proper ventilation is insisted upon in public buildings, and we should be equally persistent in our efforts to obtain it in our homes.

It is supposed that the house and its surroundings are perfectly clean. Pure air is often spoiled before it reaches our lungs by the emanation from dirty yards. In the spring we usually have a general cleaning of our yards, and this is necessary from a sanitary standpoint as well as from a desire to beautify them. This one cleaning will do no good, however, if we allow rubbish to collect during the summer, such as old cans and other things thrown out of the house. In many homes there is no way provided for the disposal of water, such as dish water and suds, so it is simply thrown over the ground near the kitchen door. Besides making a very unsightly spot in an otherwise neat yard, this is decidedly unsanitary. An open box connected with a drain, in which this water may be thrown, is a very simple and convenient way of remedying this evil. Of course there will have to be a trap below this box, to prevent the sewer gases from entering the house. This method will prevent any tendency there may be for water thrown over the yard to drain through an underground passage into water used for domestic purposes. Many cases can be cited where this has been a cause of disease.

The use of pure water need hardly be mentioned, as we are obliged to have our water tested, but one can never be too particular about the water supply, especially during warm weather.

Sunlight is an agent which assists in sanitary conditions. The presence of sunlight in dwelling rooms must be considered as essential to good health. It has several important functions. The direct rays of the sun are considered as actively promoting the assimilation of nutrition by the tissues of the body, and the formation of vigorous blood elements. It further acts directly in the destruction of organic matter, by retarding the development of bacteria. It is unnecessary, therefore, to illustrate how its absence must inevitably tend to the reduction of health, especially in the case of children, who, during the formative period of life, demand that every opportunity be given them for healthy development.

By looking closely into this matter of ventilation and sanitation, and putting our good resolutions into practice, we will not only contribute to the health and longevity of our families, but will do much to prove to the incredulous that it is possible to live comfortably and yet healthfully.

CARE OF THE HANDS.

By MISS TENA JOHNSTON, FORDWICH.

We all admire nice hands, and there are people who can tell a great deal by one grasp of the hand in regard to health, habits and character. We, to whom Nature has given short, chubby hands, envy those with long fingers and nails, as they usually denote a refined character. By careful attention and perseverance we can vastly improve the condition of our fingers and nails.

Some people crush the tips of their fingers and nails to make them longer and narrower, and press the skin from the root of the nail to make it appear longer. This method requires considerable patience to acquire the desired results.

A great many persons have the habit of making their finger joints crack, not knowing how harmful it is to the appearance of that member. It is a habit which soon causes the finger joints to become very large, which is an objectionable feature.

Hot water is one of the chief causes of red hands, and this makes many girls dislike dishwashing. One way to avoid putting the hands in very hot water, is to put the dishes in a pan, and then let the water run over them. After two applications of hot water they may be placed in a drainer to dry.

Glycerine and rose water is one of the best things to use if the hands are subject to chapping and cracking. The drawing on of an old pair of gloves before retiring keeps the moisture in the skin and retains its softness.

Chase's ointment and carbolic acid salve are good for healing quickly after cracks have made their appearance. A little forethought will prevent hands from becoming badly cracked or chapped. Be careful not to go out doors with damp hands; and avoid using soaps that are injurious to the flesh. Pure castile soap, or soaps with a good deal of vegetable oils, are the best. Most of the washing fluids are hard on the hands, as well as on the clothes.

Biting the nails is considered a very bad habit, and usually denotes nervousness, but very often it is only a habit. Many are annoyed by the appearance of white spots on the nails. These are often due to injury. The use of a steel nail file to press the skin away from the root will cause them. An orange stick or toothpick are the proper things to use for this purpose; also for cleaning the nails.

If you are troubled about the skin adhering to the nails, or if the nails are brittle, make a practice of rubbing vaseline, cold cream, or cocoa butter, into them all about the roots. Do this every night and in a few weeks you will see a great improvement.

The essentials of a manicure set are,—a nail file, a pair of curved nail scissors, an orange stick, a chamois polisher, and a little bit of nail powder. First dip you fingers into warm, soapy, soft water. When the nails are soft, file them into a curve, so that the whole nail will resemble the shape of an almond. Then use the soft stick to press the skin away, so that the nail shall not be hindered from growth. After this is done carefully dry the nails and rub vaseline into them before applying the powder. Then polish with the chamois, being careful not to hurt the nail by the friction. Lastly, rinse the nails once more, dry, and rub them with a little fine powder.

A HINT OR TWO FROM NATURE STUDY.

BY MISS E. E. GORDON, STONEY CREEK.

Happily we do not need to urge any longer the importance of the love and study of nature, or to show how in the ideal school it will be the foundation for all learning in art, science and religion, for as one has wisely said, "To know nature and man is the sum of earthly knowledge."

Although the sentimental and religious appeal which nature makes to the mind of the child is of infinite value in his education, it is necessary to deal more directly with the practical and utilitarian side of the study in school life. In the words of an authority on the subject, "The purpose of nature study is learning those things in nature that are best worth knowing in order to do the things that make life most worth living."

Scientists tell us that the first step of mankind from savagery was the domestication of animals. Man became intelligent enough to discover friends and helpers in the world of nature about him, and the first animal he tamed was the dog.

Think of the immense gain to the human races that have tamed and utilized the horse. It is just ignorance of their value and lack of intelligent nature study that prevents us getting much practical help from other wild things.

Let me give you some examples. Flies are the commonest and most annoying insects we have. They speck everything they can get at; they crawl over food; they fall into milk and cream; they destroy our meats and fruits. There are hundreds of different kinds, so to know how to get rid of them we must study their habits of life.

The common house fly lays its eggs in manure and door-yard dirt. One fly may lay 45 eggs in a night, and probably 1,000 in her life time. The eggs hatch in one day; the larvae grow for five or six days; the pupae grow from five to seven days, so that in from ten to fourteen days we have a generation of flies, and by midsummer we have swarms. The lesson we learn is, that in spite of our best efforts at cleanliness we need the help of insectivorous animals or birds to rid us of flies. Ask one of your children to watch what a king bird or a phoebe does when it flies about a herd of cattle.

Prof. Hodge saw his tame cat eat 243 flies at one meal. A little girl, at her teacher's suggestion, watched a toad snap up 128 flies in half an hour. In many a home in America now a tame toad or tree-frog is a most interesting pet, and is a wonderful fly-trap.

Most of us know that a mosquito lays its eggs on the surface of water. They hatch into wrigglers the same day, and in from seven to fourteen days there are from 200 to 400 adult mosquitoes from one female. These go on at once hatching more in the same proportion. If you have an aquarium with one little fish in it, pour in a cupful of wrigglers and see how they will disappear. A good way to kill in a few minutes all the wrigglers and also all the mosquitoes that come to lay their eggs is to pour a little kerosene oil on the pond or whatever water is near you. This has been tried on a large scale, and under all sorts of conditions, with great success.

Swallows are known to destroy enormous numbers of mosquitoes, and toads and tree-frogs are splendid helpers too. Would it not be worth while

to teach our children not to wantonly destroy these animal and bird friends or their nests?

Next, a word about moths. The damage to clothes is done by the larvae of the moth; hence, our object must be to prevent any eggs being laid in the house. All woollens and furs should be tied in tight cotton bags or packed in boxes with strips of paper pasted over the crack around the lid. If there is a possibility that eggs may have been deposited, place the garments in a tight box, and on top of the garments a saucer containing half a cup or less of carbon-bisulphide; close quickly and leave for a day, then air and pack away. (Be careful not to let any flame or fire near the carbon-sulphide, as it is very inflammable).

Anyone who is fond of house plants should welcome the little lady bug. It is the best known protector of plants against lice and scale insects. Any child could catch for you two or three to test their usefulness on a plant.

The ichneumon fly is a very wonderful and interesting thing, and very common about here. There are many kinds of larvae that live by boring deep into trees, but the ichneumon fly is always on the search for them, and patiently drills for perhaps two or three hours through the bark and deposits her egg where it will feed on the tree destroyer and thus save the life of the tree. Hundreds of our beautiful maple trees are saved to us every year by the work of this fly.

We must learn the resources of life and nature in order to use what is good. We cannot afford to neglect any longer. We ought to know and cherish the birds of our land. The swallows, night-hawks, fly-catchers and bats, if they were protected, might rid the air of harmful insects. The warblers, cuckoos, wrens, orioles, chickadees and woodpeckers, protect the trees from top to trunk, and the robins, bluebirds, meadow larks and black-birds feed largely on ground insects and worms. Our bird life represents a public property, protected by laws that are beginning to be respected. Longfellow gives us a desolate picture of a country without birds:

"The summer came and all the birds were dead.
The days were like hot coals: in the orchards fed
Myriads of caterpillars, and around
The cultivated fields and garden beds
Hosts of devouring insects crawled and fount
No foe to check their march till they had made
The land a desert without leaf or shade."

If we could only get rid of the English sparrow our own native birds would have some chance to live. The sparrow has been such a curse in other countries that governments have spent large sums of money in trying to get rid of them. They drive away our most beautiful and valuable birds, and instead of helping much to destroy insects they have attacked our gardens, orchards and grain fields. They rear five or six broods a season. Prof. Hodge gives this method of treating sparrows:

Dissolve half an ounce of powdered strychnine sulphate in half a pint of boiling water. Pour this while hot over two quarts of wheat; stir well from time to time, until all the liquid is absorbed. Dry and put away safely. Select a safe place in winter when other birds are not around, and you can catch an entire flock of sparrows.

Cats are the worst enemies of our birds. One cat kills about fifty song birds a year. All cats are practically of little use, but at least we might get rid of all the stray ones of the neighborhood. We should have birds

about our homes just as we have trees. • Every child has a deep love for pets, and for a lesson in gentleness and patience, nothing can excel the taming of a bird.

“No longer now the winged inhabitants
That in the woods their sweet lives sing away,
Flee from the form of man; but gather round
And plume their sunny feathers on the hands
Which little children stretch in friendly sport,
Towards these dreadless partners of their play.
Happiness and science dawn, though late, upon the earth.”

THE IMPORTANCE OF LITERATURE IN OUR LIVES.

By MISS M. MAUDE BROUGH, TORONTO.

The twentieth century is essentially one of extreme activity. Most of us live in a very true sense the “strenuous” rather than the “simple” life. We are so full of doing, so full of deeds, that we have no time for thoughts, either our own or those of the great men and women of our own and former times.

“Oh,” says one, “it is out of the question for me to read; I am too busy; I have not time.” Another says: “When my day’s work is done I am too tired to read anything but light literature,” and still another says: “I have not a taste for books; I really do not like reading.” Representatives of each of these classes may be found in every community.

Suppose we consider first the last word of our title, viz.: “Lives.” Our lives, yours and mine, what do they mean? Are they just one great whole, or are they many-sided? For a moment let us turn our attention to the Physical, the Spiritual, and the Mental sides of our complex being.

First, the Physical. In these days we hear a great deal about physical culture. What is it? Simply the symmetrical development of the body by a wisely directed exercise of every muscle. If we are to have strong bodies, healthy bodies, attractive bodies, bodies that will be a pleasure to ourselves and to others we must exercise and use them. Tie your arm in a sling for weeks or months and what will be the result? Loss of power in that member, will it not? The necessity for physical development is so fully realized to-day, that in our large cities and towns, we invariably find a gymnasium, well equipped with apparatus, so that boys and girls, and men and women, may have opportunities for exercise which are not afforded in their daily occupation.

Second, the Spiritual. We all recognize that man was made for God, and without Him can never be satisfied. The spiritual nature of man requires to be fed that it may develop and grow, and reach out after God and realize His presence. We shall not dwell further on this phase of the subject, but shall pass on to that which we are to consider more particularly just now, viz.:

The Mental Side of Our Nature. Let us glance just for a moment at the Creation. First we find the world prepared for man’s habitation; furnished and garnished. Next comes the creation of all living things, and lastly another living animal. An animal did I say? Yes, surely, but differing immeasurably from all that has been created thus far, for man was made in the image of God, and with a mind capable of communion with his Maker. Truly there is a very wide gulf between the animal man

and the animals of the lower kingdom. What reverence this thought inspires both for God and man.

Now the same natural law works in this realm as in the physical, to which we have just referred. If our mental qualities are to be developed they must be exercised. How many of us quite ignore the mental side of our nature, allowing it to starve and shrivel up simply for lack of use? A scientist might give us a very learned discourse on the why and wherefore of this law, and might speak learnedly of "grey matter," etc. This I cannot do, but we may be assured that the law which works in the physical world works just as surely and certainly in the mental realm.

Another thing that the scientist would tell us is that thought is a wonderful power in our lives. And so may we think for a few minutes on the importance of visions and ideals. Right thought goes before right action. The picture is older than the canvas. The plans of the building have all been in the mind of the architect before the plans were drawn, and before the first pick and shovel were used for the digging of the foundation. No man is better than his best thoughts. No life rises higher than its ideals. The boat that drifts, drifts down the stream. Have we an ideal in life? A vision of something better and noble? The answer to this question will tell the story of our worth or worthlessness; it will determine our progress or decline in right living.

We all know and recognize the power of habit in our physical life. When we first tried to take a step; how our little feet tottered as we made frantic efforts to reach a certain point. First thing we knew away went our feet from under us and we were a heap on the floor. But nothing daunted up we got and struggled onward again. Now we walk without taking thought of it at all. Then, too, when our little fingers first tried to form the letters on our slate! How tremblingly they traced the characters, and with what diligence we practised it over and over again that we might have the word of commendation from our teacher. Nothing can be more certain than that any sequence of mental action which has been frequently repeated tends to perpetuate itself without any consciously formed purpose.

Recognizing, then, that our minds are a sacred trust from the Divine Creator, and that disuse means weakening and decay, and use development and strength and culture, let us turn to the next part of our subject, namely, literature.

What is literature? I looked in Webster's dictionary, and read: "Literature is learning; acquaintance with letters or books. The collective body of literary productions embracing the entire results of knowledge and fancy preserved in writing." In a word, it is the best products of the eminent thinkers of our own time as well as of the centuries of the past.

Books. It is said it would require centuries to read the titles alone of all the books in the world's libraries. It is, therefore, a physical impossibility to read all the books within our reach, and as most of us have but little time for reading we must select wisely. The important question then is, what shall we select? If I am to read but a score of books this year which shall they be out of the thousands printed? For all books are not alike good. Many are not worth reading at all. Then, of those that are good the value is relative.

There are books that are tainted with impurity, and of course all such are to be excluded from our catalogue. We can no more afford to read a vile book, however daintily and delicately the villainess may be veiled, than we can afford to admit an impure companionship into our lives. Perhaps many of us are not sufficiently careful in this matter. Let us remember that

all we read makes an impression on our inner life, and an enduring mark upon our character. Our business in this world is spiritual culture. We must keep watch over our hearts that nothing tarnish their purity. It is well known that a corrupt thing admitted into our thoughts, not only stains our minds but leaves a memory that may draw a trail of stain after it forever.

Then, there are books that are free from immoral taint that we must exclude also unless we want to throw away our time and waste our opportunities for improvement. Probably from a moral standpoint we could raise no objection to them, but they are vapid, empty, frivolous. There are many popular novels that teach nothing, give no upward impulse, furnish no food for thought, add no additional fact to our store of knowledge, leave no touch of beauty. There is nothing in them. There is a great demand for this easy kind of reading. When I was visiting in a small town recently a person told me it was astonishing to note the books which were taken most frequently from the library—really the lightest and most trashy kind of books. This class of reading agrees well with the indolent disposition of many who want nothing that requires close application, or patient, earnest mental toil. Perhaps it may teach no false doctrine or wrong principle, yet it is evil in its effect. It enervates the mind and destroys all taste for anything solid and substantial in literature. It so enfeebles the power of attention, thought, memory and all the intellectual machinery, that there is no ability left to grapple with really important subjects. If we can read in our brief, busy years but a few books, should they not be the best and most useful in literature? Those that will start in our minds the grandest thoughts and noblest impulses, brightest conceptions and purest emotions, and set before us the truest ideals of character?

With most of us it is the latest novel, utterly regardless of what it is. With others it is anything that is talked about or extensively advertised. Many books are made to sell; nothing but money is the thought from beginning to end, and is it to be expected that they will develop in us anything higher or nobler?

Having stricken from the catalogue everything that bears any immoral taint, or is merely ephemeral or trivial, there remains a grand residuum of truly great works, some old, some new, from which we may select according to our individual tastes. We should read as a staple works that require close attention, thought and study, reading lighter books only for recreation. A knowledge of history is always desirable, and a study of the poets is one of the most helpful that can be taken up.

Emerson, in his essay on "Books" sums up the selection of books in this way:

1. Never read any book that is not a year old.
2. Never read any but famed books.
3. Never read any book you do not like.

Newspapers. May I say just a word about newspaper reading? Unquestionably a great deal of time is frittered away over the daily papers. I know a man who buys all the daily papers published in Toronto—and reads them! But he has no time for books, and never opens one. It is quite right to keep abreast of the times, and to know what is going on in the world, but this can be done by spending say fifteen or twenty minutes each day on newspapers. The careless, casual habit of scanning the newspapers has a serious effect on the mental powers, destroying the power of concentration of thought.

Magazines. Every home should be provided with one or two of the leading magazines, for they give in concise form the news of the world in a readable manner. Many Women's Institutes subscribe for a number of magazines and circulate them among the members. This is a good plan, but a still better one is to have good magazines on the home reading table, the property of the home. Much foolish talking and hurtful gossip might be avoided if a supply of bright, readable, up-to-date material were at hand. A knowledge of the world's work broadens the mind, and helps wonderfully in suppressing idle gossip and harmful small talk. If women must have something to talk about—men claim they must—let it be something more elevating and helpful than the sayings and doings of their neighbors.

In "*Sesame and Lilies*" (a book which all should read), Ruskin says: "We talk of food for the mind as of food for the body; now a good book contains such food inexhaustibly: it is a provision for life, and for the best part of us; yet how long most people would look at the best book before they would give the price of a large turbot for it! Though there have been men who have pinched their stomachs, and bared their backs to buy a book, whose libraries were cheaper to them, I think, in the end than most men's dinners are. . . . A precious thing is all the more precious to us if it has been won by work or economy. . . . No book is worth anything that is not worth much; nor is it serviceable until it has been read and reread, and loved and loved again; and marked so that you can refer to the passages you want in it. . . . Bread of flour is good; but there is bread as sweet as any honey, if we would eat it, in a good book."

Speaking further of books Ruskin says: "None of us need many books, and those which we need ought to be printed on the best paper and strongly bound. And I would urge upon every young man, as the beginning of his due and wise provision for his household, the obtaining as soon as he can, by the severest economy, a restricted, serviceable, and steadily increasing—however slowly—series of books for use through life, making his little library of all the furniture of his room the most studied and decorative piece."

It is a good plan to learn something of the author of a book. If a man is known to be an irreligious, skeptical, frivolous character, one may depend upon it the reading of his productions can hardly be inspiring. No doubt some of us will immediately think of Byron, and will ask, "Are not his writings worth reading?" To this we might say "Yes" and "No." Doubtless there is great beauty and strength in much of his poetry, but there is also much that is far from being helpful to the earnest seeker after truth. Just by way of contrast we might mention Browning and Tennyson, two of our poets whose characters were above reproach, and who were undoubtedly Christian in all their life and work. Be sure, then, to learn something of the author. And not for this reason alone, but very often a knowledge of the life of the author will give one a much better understanding of his writings.

May I again quote Ruskin in regard to our attitude toward books? He says: "Have a true desire to be taught by them, and to enter into their thoughts. To enter into theirs, you observe; not to find yours expressed by them. If the person who wrote the book is not wiser than you you need not read it; if he be, he will think differently from you in many respects. How ready we are to say of a book, 'How good that is; it is exactly what I think.' But the right feeling is, 'How strange that I never thought of that before, and yet I see it is true, or if I do not I hope I shall some day.' But be sure you go to the author to get his meaning, not yours." He also

says: "The first use of books is to enable us to consult with the wisest and greatest men on all points of difficulty."

Of all the habits that are of value to man, none can be of greater service than the reading habit in general. Literature is one of the most important facts in modern life. The printing press has made accessible to the lowliest the best that has been said and thought in the world. The newspaper, as we have already stated, is everywhere and everybody reads it. The reading habit is capable of indefinite cultivation, and when formed is a source of delight and a never-failing spring of helpfulness. Perhaps it is not so much lack of time that hinders in the acquiring of the reading habit as lack of method and purpose. The person who has formed the habits of application, attention, accuracy, method, punctuality, and thoughtfulness, has the world open to him. Some may sneer at these things as trifles, but is not life made up of trifles? The aggregation of things seemingly insignificant makes up character. The regular repetition of little things makes character; character makes life and destiny.

How to Select. It is difficult to give a list of books, as tastes, inclinations, and mental powers are so varied. However, we might suggest that biography, history, poetry, and fiction should each be selected for general reading. Remember Emerson's advice not to read a book until it is a year old. The old standard books are really the best. For character delineations perhaps Dickens stands without a peer. How real are his characters; how many of them we meet every day! A lady told the writer that she would rather read Macaulay's History of England than any story book that ever was written. She had cultivated a taste for history, but the remark is worth remembering, as it illustrates that a taste for reading substantial and helpful books may be acquired.

Libraries. In purchasing books for Women's Institute libraries, it might be well to keep in mind that they need not necessarily be all of the nature of text books, such as "Food and its Functions," "Diet in Sickness and Health," "Laundry Manual," etc. Books that will be helpful to the home-maker in any way, and that will touch her on any side of her nature, so that she will be a better woman and will make a better home-maker because of having read them, have a place in a Woman's Institute library.

VEGETABLES: SELECTION, PREPARATION, COOKING, AND CARE.

BY MISS BERTHA DUNCAN, EMERY.

Most of the farmers of this age reserve a portion of land for gardening purposes. Unfortunately in villages and towns, lots are usually so small, and so close together that the houses cover the greater part of the ground, leaving little or no space for a garden, while in cities we find very few gardens. Happy are they who are not obliged to depend on the market gardener for their daily supply of vegetables, but can gather them from their own garden when required. The best time to gather vegetables is in the morning while the dew is still on them. As they are generally not to be served until the noon-day meal, they must necessarily be kept in a very cool place until needed.

If, however, the frost, rain, or some other misfortune should befall our garden, we should be well informed regarding the selection of vegetables in the market, so that we get good value for our money.

Vegetables which are seasonable are cheaper and better than those forced in hot-beds. It requires a large outlay for the gardener to bring vegetables to maturity in advance of their natural season, and consequently he must estimate the cost of maturity and charge accordingly for the early vegetables. A cauliflower at fifty cents in May or June has no higher food value than later on in August at twenty cents. If we know the value of foods in season, we will not be tempted to pay two or three or even five times the price when they first appear on the market.

Large vegetables are usually old and woody, and on that account require more fuel to cook them to make them tender than those of medium size. Of the latter kind we get more in a measure than of the large ones, so that it is very important to choose those of medium size when they are sold in measures instead of by the pound. Not only from an economical standpoint, but also from the standpoint of nutritive value, is it important to select the medium-size or smaller ones, since they are more nutritious and less difficult of digestion.

It is never economical to purchase stale or wilted vegetables. Not only is there a great deal of waste in them, but also they are apt to be unwholesome. We cannot be too careful about using foods which are just in the first stages of decomposition. Disease may very often be traced to such causes, and it is better to not use any doubtful food, than to be obliged to pay out money for doctor-bills as a result of our carelessness.

The roots of plants are the organs through which the plants receive water and food from the earth; they work the mineral matter into cellulose starch and sugar, so that either animals or men may use it as food. If we took mineral matter into our systems in its pure state, as for instance a piece of iron, the digestive organs would simply refuse to deal with it; so we are therefore dependent upon the vegetable kingdom for this supply, so that we receive it second hand from the earth, and carnivorous animals receive it third hand.

All vegetables supply mineral matter. We find, however, different kinds of mineral matter in different vegetables, as for instance lettuce furnishes an abundance of potash, and cabbage furnishes sulphur. Some vegetables contain a considerable amount of carbohydrates (starch and sugar), as for example, potatoes contain as much as 18 per cent. of starch, and garden beets about ten per cent. of sugar. Then we have others with a relatively large proportion of carbohydrates and protein, as peas and beans. But all vegetables are valuable for the large proportion of water and the comparatively indigestible material which they contain, and, therefore, are valuable to be eaten with highly concentrated foods, as meat and eggs. The indigestible cellulose of vegetables, although it does not serve as food is a very valuable factor or aid in the digestion of the highly concentrated foods. It affords bulk, and mixes with these foods, and helps to fill the stomach so that as the food is turned round and round, it comes in contact with the digestive juices, and thus permits the digestible portion to be acted upon by the gastric juice and digested. Fortunately for us, Nature has provided an abundance of water in the various foodstuffs, for if it were not so, the amount of water necessary to meet the demands of our systems would often be far too small because most of us drink too little rather than too much water.

It is a great mistake to not have some knowledge of the composition of the different foods we are using daily. This lack of knowledge on our part is the cause of a great deal of distress and disease at times—our diets are not well-balanced, and we overtax our digestive organs.

There are a few combinations of foods which custom prescribes, as crackers and cheese, pork and beans, goose or pork and apple sauce, turkey and cranberries, lamb and peas or mint sauce; but how many people there are who are quite ignorant of the reasons for serving such combinations. Sometimes, too, we see some strong vegetable like cabbage or onions served with delicate flavored meat such as chicken or veal, when some milder flavored vegetable would be much better.

There is great diversity of opinion as to the best ways of preparing and cooking vegetables. Many people simply follow the rules which their mothers and grandmothers have taught them, and occasionally we find some who will not listen to any experiment which some neighbor has tried and proved to be successful. This latter class of people, we trust, comprise the vast minority, for now we find the majority of women eager to get the best results, so they try other more approved methods.

Unless freshly gathered, green vegetables require soaking in cold water for an hour before cooking. In fact, some vegetables are better eaten raw, as lettuce, celery, cress, cabbage, etc. Cabbage is less digestible when cooked than raw. In order to have them crisp, they should be put in ice water, or as cold water as possible, if ice is not to be had, and allowed to remain in it for at least a half an hour before being served. Careful cleaning and washing is absolutely necessary, and if salt be added to the soaking water, it destroys embryos of tape-worms and other entozoa which gain access to the body from this source.

As the season advances, we find that potatoes, carrots, etc., have lost a considerable amount of water. In order that they may regain this loss, a good plan is to thoroughly wash them and put them in cold water for an hour or two before preparing them for cooking. The same will apply to the dried vegetables. They, too, have lost their moisture in the process of drying, and in order to regain this, they require to be soaked for twelve hours in cold water before cooking. All vegetables should be washed before paring, and the roots scrubbed with a brush to remove any earth which adheres to the roots. It is this dirt which so often makes our fingers so black when we are preparing vegetables, and not altogether the juices contained in them. Remove the skin either by peeling (ex. onions), paring (ex. potatoes), or scraping (ex. carrots), and if they are too large, cut them in smaller pieces, having them all of uniform size. There may be an objection raised to this last point—cutting them into smaller pieces—on the ground that in cooking a great deal of the nutrients are dissolved out into the water and are therefore wasted. Yes, some of the nutrients are dissolved out in the water, but there is no reason why they should be wasted. The water in which vegetables are cooked may be used to make a sauce; or, in combination with some of the vegetables, milk, butter, flour, and seasonings, a delicious and nutritious "cream of vegetable soup" may be made. Or another use is to put this vegetable water into the soup kettle and use it in making soup stock, so that we derive all the benefit afforded by the various constituents of the vegetable.

As mentioned before, people differ as to the best ways of cooking vegetables. Some people prefer to put potatoes on to cook in cold water, while others say to put them into boiling water. The cold water draws out more of the nutrients than the boiling water, so that all vegetables should be put on to cook in boiling water, except dried vegetables, which should be put on to cook in cold water, and allowed to come to the boiling point and then simmered until tender. Onion, cabbage, and other strong smelling vegetables must be cooked at simmering point in an uncovered vessel, while

others may boil gently in covered kettles. In the case of the onions or cabbage cooked in this way the odor escapes gradually and is less noticeable than when it escapes in bursts of steam when the cover is taken off the kettle. To remove from onions or cabbage the strong flavor which is so disagreeable to many, put the onions in the vessel in which you intend cooking them, and add a little baking soda, then pour enough boiling water over them to cover and let boil five minutes. Drain and add boiling water to cover, and cook at simmering point until tender.

Salt should not be added to the water in which vegetables growing under ground are cooked; it is better added after they are cooked, but to those growing above ground, including onions, add two teaspoonful of salt to one quart of water.

No definite time can be given for the cooking of vegetables, as this depends greatly upon their size, age and freshness.

Canned vegetables are already cooked, and require only to be heated and seasoning added. As soon as a can is opened the contents should be turned out into a granite or porcelain bowl, and allowed to regain the oxygen lost in canning. Poisoning sometimes occurs from the use of canned goods, but this is due to carelessness in allowing it to stand for some time in the opened can.

Cooking changes the flavor of vegetables and softens the cellulose. It has the effect of making some more digestible; but lettuce, cabbage, and the like are better eaten raw. Cooked cabbage is less digestible than raw, and most indigestible when boiled till sodden and stringy.

As soon as vegetables are taken from the garden, or brought from the market, they should be kept in the refrigerator or as cool a place as possible until used. If they are to be stored for winter use, they should be kept in a cool, dark, dry place, piled up to exclude the air, or packed in dry sand, which serves the same purpose. Squashes are an exception to this rule, and require to be kept spread out in a rather warm, dry place.

On account of the value of vegetables as an article of diet, it is very important that we have some definite idea of their selection, preparation, cooking and care, so that we may obtain the greatest amount of nutriment from them.

POULTRY RAISING.

By MRS. H. R. MISENER, STONEY CREEK.

Before you commence the poultry business it would be well to consider whether or not you have a liking for it.

Obtain but one variety of strong, vigorous stock; also, the strain of the breed you procure should be such as will reach the point at which you are aiming. Your object may be "egg production," and this paper is along that line. If you wish flesh-producing birds only, obtain heavy stock. If you wish fancy stock, procure small, beautiful birds. Fighting stock will not be in keeping with Women's Institute work, and should not be raised for that purpose in our fair land.

The mixed breeds are like small potatoes—they never get to the top of the heap. I believe the Plymouth Rock to be an all round good bird for the farm. You will have better results by having half of the flock coming one year old, the remaining half coming two years old. Mark the younger half by cutting one web, or by using the leg band. The following autumn

when you replace the two-year olds with pullets you need not do any marking.

Plymouth Rocks are of little or no use as layers after the second year, as they become very fat. It is an extra good hen that lays an egg every day during the laying season; it is a valuable hen that lays two days and misses the third day; it is a good layer that lays one day and not the next; it is the average hen that lays one egg in three days. When a hen will not do the latter she is not worth her feed.

Place not more than thirty hens in one room. If you have a greater number and larger space than 12 feet by 12 feet, divide the pen.

Have your roosting poles and nest boxes at such a height that the hen will not have to jump up nor down, as this is the cause of bumblefoot, and also of breaking the egg bag. Give enough room on the perch so that one wing will not come in contact with another. This is often the cause of a cold.

Have plenty of light in the pen, but avoid too much glass. The hen will sit in the sunshine until she is uncomfortably warm, then move to another part of the pen which is not at the same temperature. Consequently she takes a chill, and egg production is stopped. Encourage the pullet with a stone nest egg, as this will save her the anxiety of looking and looking for a nest.

Domesticate the hen so you can at any time take her eggs from the nest and she will sit undisturbed. Be kind to her; speak to her; she sings for the rich and poor alike; do not excite her more than is absolutely necessary. Keep the pen clean, removing the droppings not less than twice a week.

Ventilation is necessary, so that there may be a constant supply of fresh air. Even when the weather is very cold it is well to air the hen-house thoroughly, as the sunshine will dry up the moisture and keep the place sweet. Be careful to avoid a draught. In winter the hens should be kept just warm enough so that they will scratch for their food, and not sit all day on the perch. In this case the eggs she contains will be absorbed to sustain her. It has been said of the hen, "The harder she scratches the more eggs she lays." Keep the temperature just above freezing. If the temperature is such that the combs become frozen you will be able to carry your eggs in a nut shell.

If you should meet with the misfortune of having the combs frozen, use upon the frost-bitten part the following preparation:

Sweet oil, 1 teaspoonful.

Turpentine, 1 teaspoonful.

Do not let "Biddy" out when the temperature is below zero. Do not let her in the snow; she thinks as much of her feet as you do of yours. When bright and warm make her a straw track to the stack, or to some warm, sunny place, and when she stops working hurry her in.

In summer we use every means possible to keep the poultry cool. On warm, summer nights put up two-inch square poles in the outside yard for them to roost upon. I say outside yard, for poultry was never yet kept at a profit where they destroyed the family garden, etc. Tack a bit of oilcloth over the south window when the sun is hot. Provide shade. One way to do this is to plant the Mammoth Russian Sunflower upon the south and west sides of the hen-house.

Be sure to keep the stock strictly free from lice, of which there are three species. First remove the cause—dampness and filth. If these two things exist you may use many preventives and destroyers, and still your pen

will be swarming with lice. Make a spray of four tablespoons of kerosene in one quart of water, and a few drops of carbolic acid. Spray every part of the hen-house with this preparation, as it is an excellent disinfectant.

Sulphur should not be used upon the fowls at any time, but it is very valuable for fumigating purposes if carefully used. Persian insect powder is a valuable remedy for body lice. This should be sifted freely every three weeks all the year round.

It is very necessary that the hens should be supplied with grit, as this is really their teeth. Throw gravel, oyster shells, and old broken white dishes where they can get it.

Pure water should be available at all times; cold water in summer and warm water in winter. Do not neglect this. A large percentage of the egg is composed of liquid.

Spices are excellent to feed when the fowl is not in good condition. Pratt's and Hess' are both good. But remember that you yourself do not take medicine when you are not ill. If this food is given when the hen is laying well it will increase her appetite, and this she cannot stand. She is sure to go off her feed. You may not notice it at first, but time will tell.

Feed your stock well, but never overfeed. You can determine this by feeding a quantity that will not be eaten; then less; then a quantity so that none remains. Feed three times a day. In the morning and at night feed mixed grain in about two inches of a litter of straw. Wheat and oats are good food. We are only commencing to give the oat its proper value. Corn is fattening and is also a heating food. Barley is good, but only use twenty per cent. Buckwheat is an egg producer. Feed about twenty-five per cent., and only in winter. Ground wheat and oat chop is excellent, but should be fed for a noon meal only. Feed this in a long trough, and moisten with as little as possible of water or milk. When too much water or milk is used in this way it will sour in the crop. Milk is a good substitute for meat.

Give a supply of green food daily—cabbage, pulped turnips, apples, beets and lettuce. Table scraps of all kinds can be used to advantage, when they are not too salty. Avoid using pepper or peppers, except on a very cold day.

The money paid for a poultry publication is a safe investment, giving you back your money and ten per cent. interest.

Diseases of fowls are so numerous that we shall only touch on the very common ones. If a fowl is very ill the best cure is one stroke with an axe; bury her deep, and the whole stock will not be affected. In all cases remove the sick fowl at once, so that the disease may not spread. In the case of a cold in the head, bathe with equal parts of turpentine and lard, and when she wheezes give her a small bit of lard full of black pepper. For scaly leg bathe with kerosene.

Egg breaking is sometimes caused by the lack of oyster shell. If you have not used this you do not know its value. The last egg of summer is good, but the first egg of winter sounds more to the point. After the moulting season feed for egg production.

Do not set pullets; they have not strength enough for the task; they do not understand the work, and there is more profit in keeping them for laying.

Remove the clucker at once; it is contagious. If you wish to break her up, put her in a pen, feed her well, and keep moving her until she gives up the nest. If you wish to set her, prepare a good nest in a box twice her length, putting before her a supply of food, water and grit. Put her on thirteen eggs after night. Do not feed her heavy grain. If it is a dry

season dip the eggs in warm water on the twentieth day. After giving plenty of time the chicks can be removed from the shell if necessary. Do not feed young chicks for twenty-four hours. Put before them coarse sand and water. Their first meal should consist of rolled oats.

When your hens moult feed them well, but not on soft foods. When it is time for moulting use sparingly of sunflower seed. This you will find a great help in the shedding of the feathers.

When mating your birds, be cautious in buying the male. Remember he is half your flock. In the points your females are lacking, make up in the male. For instance, if the hens are long in the leg, mate with a male short in the leg; if long in the saddle, mate with a short-saddled bird. When fattening stock, separate the males from the females. Shut them in a pen not too light, and feed heavy grains.

It may be that some of the ladies are thinking that many of these things I have enumerated are unimportant. But I may say that if these things are neglected you may keep hens for a good many years and never see a cent of profit. You will just have the convenience of eggs and poultry for home consumption, well paid for in grain. A very angry woman once marvelled why a dollar bill she had pinned to a postal card did not reach its destination. She had not gone about her work in the right way!

The poultry business is "up" and "down," and there are many discouragements by the way, but ambition and good management will bring success. For every dollar invested in good stock you will get sixty-six per cent. profit, and possibly more.

QUESTION DRAWER.

(Questions Answered by Miss Laura Rose).

DAIRYING.

Q. Does a separator make soft butter?

A. That question is often asked, and I would answer NO. The machine is often bought in the spring just when the cows are turned into heavy pasture fields, and it is the change to succulent food which makes soft butter, not the separator.

Q. What care should separator cream have?

A. It should be immediately cooled by setting in water and stirring it frequently. Even in very cold weather this should be done if a good flavor is wanted. When cold, add to the rest of the cream, and stir well from the bottom to the top. I prefer a cream can to a crock. It should be always kept covered.

Q. Can you tell why I was two hours churning this morning?

A. That is a question many would like to hear answered, and it is a rather long one. The churn too full makes long, hard work. It is best to have the churn only one-third full, and never over half full. Allowing too much skim milk to be in your cream is a great bother. Have cream, if you can, which will make two and one-half pounds to the gallon. The cream may have been too cold; or from cows a long time in milking, or which get nothing but dry food.

Q. What is the right temperature to churn at?

A. Have the cream in your churn of the proper quality and quantity; then by practice find out the temperature which will bring the butter in from twenty to thirty minutes, and that is the right temperature for you.

Q. When and how should cream be heated for churning?

A. Just before beginning to churn place the cream can in a dish of hot water, and using the thermometer and a cream stirrer, quickly bring the cream to the desired temperature.

Q. What is good for cow-pox?

A. A doctor told me nothing was better than rubbing the udder with iodine ointment.

Q. What causes salt to crust on the butter, or even the paper it is wrapped in?

A. The butter is kept in too dry an atmosphere, causing the moisture to evaporate from the butter, and leaving the salt behind on the surface.

Q. Does it injure butter to freeze it?

A. No; the colder it can be kept the better for it.

COOKING.

Q. Why in making fresh yeast do you use each time a dry yeast cake instead of saving a little of the old yeast and using it to start the new?

A. By using a fresh dry yeast cake we are surer of having yeast of uniform strength and quality. When using old yeast one never knows how many foreign germs have gotten into it, and these would of course be propagated in the new yeast.

Q. After making your yeast where do you keep it?

A. I put it in a glass jar and screw on the top, not using a rubber ring. The jar is kept in a cool place on the cellar floor.

Q. What kind of flour do you use for bread?

A. Lately we have been setting the sponge with Manitoba flour, and using our local flour to stiffen the sponge into a dough. I think the combining of the two kinds improves the bread.

Q. How do you make buns so that they will split open?

A. I place the bun dough on the bake board and roll it out with the rolling pin to about three-quarters of an inch thickness, then cut with a large-sized cake cutter. Wet half of the cut out piece with melted butter, fold over and press down. Place far apart in the baking pan, and allow it to get very light before baking in a quick oven.

Q. How do you keep your celery for winter use?

A. We lift it very late in the fall when the ground is moist, being most careful not to break or crack the stalks, and also to leave as much earth on the roots as possible. Our cellar has an earth floor and is cool. We pack the celery along one end against the stone wall and place a board up in front of it. If the roots get a little dry they may be slightly watered, but avoid wetting the stock, as it will cause rot.

Q. You speak of cooking celery; how do you do it?

A. All the green, coarse parts we clean and cut in half-inch lengths, and let them cook for several hours; then add a little milk, but of butter, seasoning, and flour enough to thicken slightly.

(Questions Answered by Miss Bertha Duncan.)

Q. Do you use olive oil in your salad dressing?

A. I usually substitute butter, as so many people object to the flavor of olive oil. Olive oil is considered the most wholesome of all vegetable oils.

Q. In using canned peas would you use the liquid?

A. I certainly would; the liquid contains much of the food value of the peas.

Q. When do you add soda to tomato soup?

A. When the tomato is scalded, and just before adding to it the hot milk mixture.

Q. Is meat used for soup stock waste material?

A. No, it still has a certain amount of food value, and when combined with highly concentrated food makes a good nutritious dish.

Q. Why do green salads play such an important part in our diet?

A. They are healthful, appetizing, economical, and furnish the mineral matter so necessary for our body.

Q. Can a boiled custard which has become curdled be restored to a smooth consistency?

A. If the coagulation of the albumen has not gone too far, by placing the custard in a bowl of cold water and beating quickly, you can overcome the tendency to curdiness.

Q. What causes peas or bean soup to be grainy?

A. Being cooked too rapidly at a high temperature. Long, slow cooking at a simmering temperature gives such soups a much smoother and nicer consistency.

(Questions answered by Miss A. Delaney).

Q. How long do you cook macaroni?

A. Put the macaroni in boiling, salted water and boil for twenty minutes.

Q. How do you prevent custard curdling?

A. Stir it constantly and remove from the stove when it creams on the spoon.

Q. How can you prevent baked custard becoming watery?

A. Put the custard cups or dish in a pan of water in the oven and cook slowly.

Q. How can you prevent tomato soup curdling?

A. First add one-quarter teaspoonful of soda to a can of tomatoes. This neutralizes the acid in the tomatoes. Make the white sauce, heat the tomato liquid in a sauce pan, adding the seasonings to it. When you are ready to serve the soup pour the white sauce and the tomato liquid into the soup tureen together and stir.

Q. How can you render rhubarb less acid?

A. You can neutralize the acid with soda. Rhubarb will then require less sugar.

Q. How do you make iced tea?

A. I think it is best to add boiling water to the tea leaves and strain off the liquid from five to ten minutes later. Allow it to cool and chill by packing ice around the dish. I think the ice cream freezer is a good thing in which to chill the tea. Never add ice to the liquid, unless the ice comes from water which you know to be pure. The germs on ice are in a resting stage, but revive when they enter a favorable temperature (that is the temperature of the body).

Q. When do you think it best to add sugar to apple sauce?

A. When the apple sauce is cooked. Cane sugar in cooking changes into a different form called glucose. This form of sugar is not so sweet as cane sugar, so that it requires less sugar to sweeten the apple sauce when it is added last.

Q. What do you do with syrup in which apples were cooked?

A. Boil the syrup down some and serve it with the apples; or put the syrup in a jar and keep it to cook apples in again.

(Questions answered by Dr. Annie Backus).

Q. Does fruit cause rheumatism?

A. No. Fresh fruit is beneficial. The acid of fruit through some chemical change is said by physiologists to become alkaline in the stomach.

Q. How about cider?

A. Cider passes very quickly through the alcoholic fermentation and contains a larger per cent. of alcohol than beer very often; so, as alcohol is sometimes a factor in producing rheumatic affections, it might be harmful.

Q. Is consumption inherited?

A. Not directly; it is only a tendency to consumption that is inherited. Much of lung trouble could be prevented if people would pay strict attention to proper ventilation and breathe properly.

Q. What do you consider most important in the hygiene of the home?

A. Fresh air and pure water. When you consider the prevalence of tuberculosis or consumption, and realize the fact that it can be prevented by proper care in ventilation and inhalation, surely you will agree with me in this. And as most of our low fevers and intestinal troubles come from drinking impure water, you can see why first-class fresh air and pure water are most important for health.

Q. How would you dress a growing girl?

A. I would dress a growing girl in loose, comfortable clothes, of proper texture and warmth, suitable to the season. Have all garments hanging from the shoulders. I would put a hat on her head that would stay there, so that she could move about without her hands on her head. I would put shoes on her feet for protection and comfort, and send her out to romp and tramp with her brothers.

(Questions answered by Miss Mabel Govenlock).

Q. Can an omelet be turned satisfactorily?

A. No; this is unnecessary if it is put in the oven for a few minutes after it has set.

Q. When should custards be strained?

A. Baked custards should be strained before cooking and soft custards after cooking.

Q. What is the nutritive value of beef tea?

A. The nutritive value of beef tea is very low because the muscle fibre of the meat must be eaten in order to derive nutriment. Beef tea is, however, a stimulant.

Q. What nuts may be combined with apples to make a salad?

A. Walnuts, almonds, hickory or chestnuts.

Q. What is the reason that a gelatine jelly in which raw pineapple has been put will not jell or set?

A. The pineapple contains a ferment which eats or digests the gelatine; so the mixture remains liquid.

Q. What are some substitutes for pies?

A. Fresh fruit is one of the best. Serve with sugar and if possible cream, or as a salad. Light vegetable salads may be used. For those who

can easily obtain milk, junket and custard served in many ways are splendid. Ices and ice-creams are easily made and make a good summer dessert. These with simple gelatine jellies will give variety, which is so necessary.

Q. In making lemon snow, why is lemon juice added last?

A. Lemon juice should not be cooked in a mixture, for it is volatile, and will cook off, and a larger quantity will be needed. It also becomes bitter with cooking.

(Questions answered by Mrs. Colin Campbell).

Q. What are the chief values of fruits to the body?

A. They are chiefly valuable for their sugar, acids, and salts, and are cooling, refreshing and stimulating. They act as a tonic and assist in purifying the blood.

Q. What fruits do you consider the most nutritious?

A. Bananas, dates, figs, prunes and grapes, owing to the large amount of sugar they contain.

Q. Fruits containing much sugar do not seem to agree with me. Name the kinds that do not contain much sugar?

A. Plums, peaches, apricots and raspberries have less sugar than other fruits. Apples, sweet cherries, grapes, and pears contain the largest amount.

Q. Should fruits be washed before using?

A. Yes; they should be thoroughly washed before using. Diphtheria has been known to be carried by unwashed apples, and even if no contagion exists, it is better to wash fruit that has been handled before reaching the consumer.

Q. Would you wash dates or figs?

A. Yes; they suffer no appreciable loss by being quickly but carefully washed and dried over a range, or in the sun.

Q. Are bananas easily digested?

A. Really ripe bananas, being chiefly sugar, are easily digested, and under certain conditions are an excellent food. When not really ripe they are exceedingly indigestible.

Q. Should apples be pared for children?

A. They should always be pared for nursery use; also pears, plums, etc.

Q. When is the best time to eat fruit?

A. Just before a meal, and the worst time to eat it is just after meals. If possible fruit should always appear on the breakfast table. In cases where uncooked fruit cannot be freely eaten, many kinds may be cooked and prove valuable. Never eat unripe fruit or that which is beginning to decay.

Q. Why cook fruits?

A. Cooking renders most fruits more digestible by softening their cellulose.

Q. When should vinegar be added to salads?

A. When salads are dressed at table, first sprinkle with salt and pepper, add oil and lastly vinegar. If vinegar is added before oil, the greens will become wet and the oil will not cling but settle to the bottom of the bowl.

Q. Give a recipe for French Salad Dressing?

A. $\frac{1}{2}$ teaspoon salt; $\frac{1}{4}$ teaspoon pepper; 2 tablespoons of vinegar; 4 tablespoons of olive oil. Mix ingredients and stir until well blended.

Q. Why should salads constitute a course in every dinner?

A. They contain but little nutriment, but are cooling, refreshing and assist in stimulating the appetite. They are valuable for the potash salts they contain.

Q. How should salads made of greens be served?

A. The vegetables should be thoroughly washed; allowed to stand in cold or ice water until crisp; drained; set aside in a cold place until serving time. Dressing may be added at table or just before sending to table.

Q. Give recipe for meat salad?

A. Meat for salads should be free from skin and gristle, cut in small cubes and allowed to stand in French dressing before combining with vegetables.

Q. What are the most essential things to be considered in the choice of any home?

A. A wholesome situation, good ventilation, good drainage, and dry cellar.

Q. How should the rooms of a house be arranged?

A. Let the living rooms and bed rooms, as far as possible, have the sunshine a portion of each day, and reserve the north side of the house for storerooms and rooms seldom occupied.

Q. How should a kitchen be arranged?

A. First see to it that the kitchen is well lighted, well aired, and of medium size. Let sink, stove, pantries, and space for all operations in cooking be close at hand.

Q. Should cut glass be washed in hot water?

A. Yes; but be careful never to put glass into hot water bottom first as the sudden expansion may crack it. Slip it in edgeways and the finest glass will be safe.

Q. Should heavy carpets be taken up every year?

A. Heavy carpets do not require to be taken up every year. Once in two or three years is sufficient unless they are in constant use. Take out the tacks each year, fold back the carpet half a yard or so, have the floor washed with strong suds in which borax has been dissolved (a tablespoonful to a pail of water); then dust black pepper along the edges and retack the carpet. This keeps moths away, and as their favorite place is in corners and folds, this method enables one to search them out and destroy them.

Q. How would you put away winter clothing in the spring?

A. All winter clothing should be packed in trunks, or put in bags made in several thicknesses of newspaper—printer's ink being one of the most effectual protections against moths. Gum camphor is also excellent.

Q. What is the first rule of successful housekeeping?

A. "Study to be quiet," in thought, word and action. Fretting will never mend a matter.

Q. Will you explain the different ways of combining ingredients in cooking?

A. There are three ways, viz.: Stirring, beating, and cutting and folding. By stirring ingredients are mixed; by beating a large amount of air is enclosed; by cutting and folding air already introduced is prevented from escaping.

Q. How would you prepare water-ice and ice-cream quickly in small quantities for the sick?

A. By putting the mixture in a small tin box, placing ice in a lard pail, and surrounding the tin with finely crushed ice and salt. Cover pail. As mixture begins to freeze scrape from sides and bottom of box and beat until smooth.

SUMMER SERIES OF WOMEN'S INSTITUTE MEETINGS, 1905.

DIVISION I. Miss Laura Rose, Guelph: Miss Bertha Duncan, Emery (May 24th to June 2nd): Miss A. Delaney, 89 Marion Street, Toronto (June 5th to 23rd).

1	Clanbrassil, Presbyterian Church	Haldimand	May	24
2	York, Methodist Church	Haldimand	"	25
3	Canfield, McDonald's Hall	Haldimand	"	26
4	DeCewsville, Methodist Church	Haldimand	"	27
5	Selkirk, Derby's Hall	Haldimand	"	29
6	Cheapside, Town Hall	Haldimand	"	30
7	Nanticoke, Town Hall	Haldimand	"	31
8	Simcoe, Home Circle Hall	North Norfolk	June	1
9	Scotland, School Room	South Brant	"	2
10	Mohawk	South Brant	"	5
11	Burford, Rutherford's Hall	South Brant	"	6
12	Catcart, Foresters' Hall	South Brant	"	7
13	Tranquility, School House	North Brant	"	8
14	St. George, Library Hall	North Brant	"	9
15	Burlington, St. Jude's Church	Halton	"	10
16	Appleby, School House	Halton	"	13
17	Zimmerman	Halton	"	14
18	Palermo, Methodist Sunday School	Halton	"	15
19	Postville, Township Hall	Halton	"	16
20	Milton, Royal Templar's Hall	Halton	"	19
21	Campbellville, Orange Hall	Halton	"	20
22	Nassagaweya, Mrs. I. Fletcher's	Halton	"	21
23	Georgetown, Council Chamber	Halton	"	22
24	Acton, Town Hall	Halton	"	23

DIVISION II. Miss Lilian D. Gray, 650 Bathurst Street, Toronto (May 25th to June 2nd): Miss Bertha Duncan, Emery (June 3rd to 23rd): Dr. Annie Backus, Aylmer.

1	West Flamboro, Terryberry Hall	North Wentworth	May	25
2	Westover, Patron's Hall	North Wentworth	"	26
3	Rockton, Town Hall	North Wentworth	"	27
4	Lynden, Keivel's Hall	North Wentworth	"	29
5	Jerseyville, Weir's Hall	South Wentworth	"	30
6	Caledonia, Mrs. J. W. Richardson's	South Wentworth	"	31
7	Glanford, Temperance Hall	South Wentworth	June	1
8	Hannon	South Wentworth	"	2
9	Binbrook, Methodist School Room	South Wentworth	"	3
10	Black Heath, Presbyterian Church	South Wentworth	"	5
11	Tapleystown, St. George's Hall	South Wentworth	"	6
12	Winona, Institute Building	South Wentworth	"	7
13	Stoney Creek, Institute Hall	South Wentworth	"	8
14	Grimsby	Lincoln	"	9
15	Smithville, Morgan's Hall	Lincoln	"	10
16	Beamsville, Mrs. Kelly's	Lincoln (afternoon)	"	12
17	Beamsville, Club Room	Lincoln (evening)	"	12
18	Campden, Dr. Comfort's	Lincoln (afternoon)	"	13
19	Campden, Fry's Hall	Lincoln (evening)	"	13
20	Jordan Station, Mrs. Alf. Wismer's	Lincoln (afternoon)	"	14
21	Jordan Station Hall	Lincoln (evening)	"	14
22	Wellandport, McKay's Hall	Monck	"	16
23	Winger, Coleman's	Monck	"	17
24	Marshville, Town Hall	Monck	"	19
25	Sherkstone, Mrs. A. N. Sherk's	Welland	"	20
26	Ridgeway, Library Room	Welland	"	21
27	Stevensville	Welland	"	22
28	Allanburg, Mrs. C. S. Ware	Welland	"	23

DIVISION III. Mrs. D. McTavish, North Bruce; Miss I. A. Morrison, 428 Euclid Avenue, Toronto (June 1st to 28th).

1	Islington, Township Hall	West York	May 25
2	Weston, Council Chamber	West York	" 26
3	Fairbank, Methodist Church	West York	" 27
4	Elia, Hall	West York	" 29
5	Maple, Public Library	West York	" 30
6	Woodbridge, Orange Hall	West York	" 31
7	Kleinburg	West York	June 1
8	Ballyeroy	South Simcoe	" 2
9	Cookstown, Jebb's Hall	South Simcoe	" 3
10	Thornton, Temperance Hall	South Simcoe	" 5
11	Churchill, Orange Hall	South Simcoe	" 6
12	Minesing	Centre Simcoe	" 7
13	Lafontaine	Centre Simcoe	" 8
14	Wyebridge	Centre Simcoe	" 9
15	Vasey	Centre Simcoe	" 10
16	New Lowell, Town Hall	West Simcoe	" 12
17	Stayner, Stewart's Hall	West Simcoe	" 13
18	Nottawa, Orange Hall	West Simcoe	" 14
19	Duntroon, Bridge's Hall	West Simcoe	" 15
20	Singhampton, Grant's Hall	West Simcoe	" 16
21	Creemore, May's Hall	West Simcoe	" 19
22	Everett, Orange Hall	West Simcoe	" 20
23	Horning's Mills	Dufferin	" 21
24	Honeywood, Methodist Church	Dufferin	" 22
25	Shelburne, Town Hall	Dufferin	" 26
26	Camilla, Harshaw's Hall	Dufferin	" 27
27	Laurel, Orange Hall	Dufferin	" 28

DIVISION IV. Miss Blanche Maddock, Guelph; Mrs. J. W. Bates, Broad Ripple, Ind.

1	Meaford, Council Chamber	North Grey	June 1
2	Annan, Grange Hall	North Grey	" 2
3	Kemble, Library Hall	North Grey	" 3
4	Kilsyth, Township Hall	North Grey	" 5
5	Desboro	North Grey	" 6
6	Chatsworth	North Grey	" 7
7	Massie, Temperance Hall	North Grey	" 8
8	Owen Sound	North Grey	" 8
9	Allenford, Orange Hall	West Bruce	" 10
10	Tara, Council Chamber	West Bruce	" 12
11	Port Elgin, Town Hall	West Bruce	" 13
12	Gillie's Hill, Township Hall	Centre Bruce	" 14
13	Paisley, Putnam's Hall	Centre Bruce	" 15
14	Glammis, Hotel	Centre Bruce	" 16
15	Ripley, Town Hall	Centre Bruce	" 17
16	Kincardine, Town Hall	Centre Bruce	" 19
17	Flesherton, Town Hall	Centre Grey	" 21
18	Maxwell, Orange Hall	Centre Grey	" 22
19	Vandeleur, Foresters' Hall	Centre Grey	" 23
20	Kimberley, Public Hall	Centre Grey	" 24
21	Heathcote, Orange Hall	Centre Grey	" 26
22	Ravenna, Town Hall	Centre Grey	" 27
23	Tobermory	North Bruce	" 29

DIVISION V. Miss Bella Millar, Guelph; Miss Blanche Maddock, Guelph (May 24th to 30th); Miss S. A. Morris, Toronto (May 31st to June 17th); Mrs. Helen Wells, Syracuse, N. Y. (June 19th to 23rd).

1	Holstein, Robert's Hall	South Grey	May 24
2	Dromore, Russell	South Grey	" 25
3	Durham, Town Hall	South Grey	" 26
4	Hanover	South Grey	" 27
5	Elmwood, Miss McGillivray's	South Grey	" 29
6	Walkerton, Mr. Sherrington's	South Bruce	" 30
7	Belmore	South Bruce	" 31

8 Mildmay	South Bruce	June 1
9 Teeswater	South Bruce	" 2
10 Holyrood	South Bruce	" 3
11 Harriston	Union (evening).....	" 5
12 Clifford	Union (afternoon).....	" 6
13 Drew	Union (afternoon).....	" 7
14 Palmerston, Town Hall	West Wellington	" 8
15 Moorefield, Clegg's Hall	West Wellington	" 9
16 Rothsay, Temperance Hall	West Wellington	" 10
17 Drayton, Town Hall	West Wellington	" 12
18 Helbin, Foresters' Hall	West Wellington	" 13
19 Glenallan, Coote's Hall	West Wellington	" 14
20 Winfield, Orange Hall	West Wellington	" 15
21 Alma, Town Hall	West Wellington	" 16
22 Belwood, Lodge Room	Centre Wellington	" 17
23 Marsville	Centre Wellington	" 19
24 Erin, Workmen's Hall	Centre Wellington	" 20
25 Ospringe	Centre Wellington	" 21
26 Coningsby	Centre Wellington	" 22
27 Hillsburg, Workmen's Hall	Centre Wellington	" 23

DIVISION VI. Mrs. Jean Joy, 317 Brunswick Avenue, Toronto; Miss L. Shuttleworth, Guelph.

1 Bright	North Oxford	May 24
2 Currie, Workmen's Hall	South Oxford	" 25
3 Vandecar, Methodist Church	South Oxford	" 26
4 Burgessville, Methodist Church	South Oxford	" 27
5 Norwich, Baptist Church	South Oxford	" 29
6 Otterville, Oddfellows' Hall	South Oxford	" 30
7 Springford, Town Hall	South Oxford	" 31
8 Tillsonburg, Methodist Church	South Oxford	June 1
9 Brownsville, Methodist Church	South Oxford	" 2
10 Mount Elgin, Town Hall	South Oxford	" 3
11 Beachville, Library Hall	South Oxford	" 5
12 Kintore	North Oxford	" 6
13 Tavistock	South Perth	" 7
14 Staffa	South Perth	" 8
15 Kirkton	South Perth	" 9
16 Exeter, Town Hall	South Huron	" 10
17 Bayfield, Town Hall	South Huron	" 12
18 Clinton	West Huron	" 13
19 Holmesville, Methodist Church	West Huron	" 14
20 Goderich, Temperance Hall	West Huron	" 15
21 Constance, Temperance Hall	East Huron	" 16
22 Ethel, Township Hall	East Huron	" 17
23 Molesworth, Orange Hall	East Huron	" 19
24 Brussels	East Huron	" 20
25 Gorrie, Town Hall	East Huron	" 21
26 Fordwich, Foresters' Hall	East Huron	" 22
27 Milverton	North Perth	" 23
28 Hampstead	North Perth	" 24
29 Wellesley, Town Hall	North Waterloo	" 26
30 Winterbourne, Lecture Room	North Waterloo	" 27

DIVISION VII. Miss Gertrude Gray, 650 Bathurst Street, Toronto; Mrs. Helen Wells, Syracuse, N. Y.

1 Haysville, Hall	South Waterloo	May 25
2 New Dundee, Mrs. Thamer's	South Waterloo (afternoon)	" 26
3 Ayr, McGeorge's Hall	South Waterloo (evening)	" 26
4 Branchton, Mrs. R. S. Oliver	South Waterloo	" 27
5 Galt, Mrs. Geo. R. Barrie's	South Waterloo (afternoon)	" 29
6 Galt, Hall	South Waterloo (evening)	" 29
7 Hespeler, Mrs. A. Rudell's	South Waterloo (afternoon)	" 30
8 Blair, Temperance Hall	South Waterloo (evening)	" 30
9 Strasburg, Mrs. O. B. Stauffer	South Waterloo (afternoon)	" 31
10 Doon, Hall	South Waterloo (evening)	" 31

11 Paisley Block, W. Whitelaw's	South Wellington	June 1
12 Aberfoyle	South Wellington	" 2
13 Marden	South Wellington	" 3
14 Rockwood, Mrs. Harris	South Wellington	" 5
15 Everton	South Wellington	" 6
16 Arthur, Kennedy's	East Wellington	" 7
17 Kenilworth	East Wellington	" 8
18 Damascus	East Wellington	" 9
19 Hereward	East Wellington	" 10
20 Alton	Peel	" 12
21 Bolton	Peel	" 13
22 Caledon East	Peel	" 14
23 Cheltenham	Peel	" 15
24 Brampton	Peel	" 16

DIVISION VIII. Miss Isobel Rife, Hespeler; Miss M. Govenlock, Seaforth.

1 Springfield, Bee Hive Hall	East Elgin	May 30
2 Mount Salem, Methodist Church	East Elgin (afternoon)	" 31
3 Copenhagen	East Elgin (evening)	" 31
4 Sparta, Methodist Church	East Elgin	June 1
5 Aylmer, Town Hall	East Elgin	" 2
6 Dutton, Town Hall	West Elgin	" 3
7 Highgate	East Kent	" 5
8 Chatham, Union Hall	West Kent	" 6
9 Cedar Springs, Town Hall	West Kent	" 7
10 Port Alma, Mrs. John Carr	West Kent	" 8
11 Coatsworth, Mrs. J. Hopper	West Kent	" 9
12 Wheatley, Gibson's	West Kent	" 10
13 Quinn, Town Hall	West Kent	" 12
14 South Woodslee	North Essex	" 13
15 Essex	North Essex	" 14
16 Wyoming	East Lambton	" 16
17 Bridgen, MacKenzie's Hall	West Lambton	" 17
18 Appin	West Middlesex	" 19
19 Strathroy	West Middlesex	" 20
20 Coldstream, Town Hall	North Middlesex	" 21
21 Beechwood, Town Hall	North Middlesex	" 22
22 Ailsa Craig, Town Hall	North Middlesex	" 23
23 Parkhill, Council Chamber	North Middlesex	" 24

DIVISION IX. Mrs. Colin Campbell, Goderich; Miss Gertrude Carter, Guelph.

1 Thornhill	East York	May 25
2 Scarboro' Junct., Temperance Hall	East York	" 26
3 Ellesmere	East York	" 27
4 Box Grove	East York	" 29
5 Stouffville	East York	" 30
6 Uxbridge, Market Hall	North Ontario	" 31
7 Greenbank	South Ontario	June 1
8 Little Britain	West Victoria	" 2
9 Oakwood	West Victoria	" 3
10 Cambray	West Victoria	" 5
11 Lindsay	West Victoria	" 6
12 Fenelon Falls, Dickson's Hall	East Victoria	" 7
13 Bobcaygeon	East Victoria	" 8
14 Dunsford, Methodist Church	East Victoria	" 9
15 Omemee, McCuffrey's	East Victoria	" 10
16 Mt. Pleasant, Temperance Hall	East Durham	" 12
17 Springville	East Durham	" 13
18 Bethany, Orange Hall	East Durham	" 14
19 Millbrook, Town Hall	East Durham	" 15
20 S. Monaghan, Foresters' Hall	East Durham	" 16
21 Garden Hill, Orange Hall	East Durham	" 19
22 Lakefield	West Peterboro	" 20
23 Springbrook, Foresters' Hall	North Hastings	" 21
24 Wellman's Corners, Orange Hall	North Hastings	" 22

25	Queensboro	North Hastings	June 23
26	Tweed, Town Hall	East Hastings	" 24
27	Warsaw	East Peterboro	" 26

DIVISION X. Mrs. A. Kinney, Grandview; Miss Fuller, Toronto (May 24th to June 19th); Miss G. Gray, Toronto (June 20th to July 7).

1	Whitevale, Foresters' Hall	South Ontario	May 24
2	Kinsale, Temperance Hall	South Ontario	" 25
3	Whitby, Council Chamber	South Ontario	" 26
4	Columbus, Purves' Hall	South Ontario	" 27
5	Camborne, Sunday School Room	West Northumberland	" 29
6	Fenella, School Room	West Northumberland	" 30
7	Grafton, Sunday School Room	West Northumberland	" 31
8	Bowmanville	West Durham	June 1
9	Hampton	West Durham (afternoon)	" 2
10	Solina	West Durham (evening)	" 2
11	Castleton, Town Hall	East Northumberland	" 3
12	Brighton, School House	East Northumberland	" 5
13	Wooler, Town Hall	East Northumberland	" 6
14	York Road, Mrs. J. Kendrick's	East Northumberland	" 7
15	Frankford, Foresters' Hall	West Hastings	" 8
16	Wallbridge, Town Hall	West Hastings	" 9
17	Harder's School House	West Hastings	" 12
18	Bayside	West Hastings	" 13
19	Foxboro	East Hastings	" 14
20	Shannonville	East Hastings	" 15
21	Melrose, School House	East Hastings	" 16
22	Halston	East Hastings	" 17
23	Read, Hanley's Hall	East Hastings	" 19
24	Lonsdale, School House	East Hastings	" 20
25	Marvsville, Ryan's Hall	East Hastings	" 21
26	Adolphustown, Town Hall	Lennox	" 22
27	Conway, A. O. U. W. Hall	Lennox	" 23
28	Emerald	Amherst Island	" 24
29	Stella	Amherst Island	" 26
30	Chesterville, Foresters' Hall	Dundas	" 28
31	Morewood	Dundas	" 29
32	Winchester	Dundas	" 30
33	Inkerman	Dundas	July 1
34	North Williamsburg	Dundas	" 3
35	Forester's Falls	North Renfrew	" 5
36	Beachburg	North Renfrew	" 6
37	Westmeath	North Renfrew	" 7

DIVISION XI. Miss Agnes Smith, Hamilton.

1	Muskoka Falls, School House	South Muskoka	June 1
2	Macaulay, Mrs. Barrow's Home	South Muskoka	" 2
3	Parkersville, Mrs. Emmet's Home	South Muskoka	" 3
4	Ziska, Town Hall	South Muskoka	" 5

(Special Northern Series for Organization).

1	Bala, Burgess' Hall	Port Carling	June 6
2	Port Carling, Orange Hall	Port Carling (afternoon)	" 7
3	Port Carling, Victoria Hall	Port Carling (evening)	" 7
4	Brackenrig, School House	Port Carling	" 8
5	Gravenhurst, Town Hall	South Muskoka	" 9
6	Germania, Wises' School House	South Muskoka	" 10
7	Bracebridge, Town Hall	South Muskoka	" 12
8	Baysville, Orange Hall	South Muskoka	" 13
9	Callander	East Parry Sound	" 15
10	Powassan, Stewart's Hall	East Parry Sound	" 16
11	Nipissing	East Parry Sound	" 17
12	Restoule	East Parry Sound	" 19
13	Loring, Russell Hall	East Parry Sound	" 20

14	Arnstein, School House	East	Parry Sound	June	21
15	Golden Valley, School House	East	Parry Sound	"	22
16	Commanda, School House	East	Parry Sound	"	23
17	Trout Creek, Trussler's Hall	East	Parry Sound	"	24
18	South River, Vincent's Hall	East	Parry Sound	"	26
19	Sundridge, Orange Hall	East	Parry Sound	"	27
20	Burk's Falls, Sharp's Hall	East	Parry Sound	"	28
21	Midlothian, School House	East	Parry Sound	July	3
22	Doe Lake, School House	East	Parry Sound	"	4
23	Kearney	East	Parry Sound	"	5
24	Emsdale, Agricultural Hall	East	Parry Sound	"	6
25	Sprucedale, Agricultural Hall	East	Parry Sound	"	7

DIVISION XII. Miss Lilian D. Gray, 650 Bathurst Street, Toronto.

(Special Northern Series for Organization).

1	Walford, School House	East	Algoma	June	7
2	Blind River	East	Algoma	"	8
3	Iron Bridge, Orange Hall	East	Algoma	"	9
4	Bellingham, D. Bell's House	East	Algoma	"	10
5	Sowerby, Maccabees' Hall	East	Algoma	"	12
6	Livingstone Creek, School House	East	Algoma	"	13
7	Little Rapids, School House	East	Algoma	"	14
8	Alma Heights, School House	East	Algoma	"	15
9	Desbarats	East	Algoma	"	16
10	MacLennan, Hall	Centre	Algoma	"	17
11	Bar River, Hall	Centre	Algoma	"	19
12	Echo Bay, Hall	Centre	Algoma	"	20
13	South Tarantorus, School House	Centre	Algoma	"	21
14	East Korah, School House	Centre	Algoma	"	22
15	Base Line, School House	Centre	Algoma	"	23
16	Goulais Bay	Centre	Algoma	"	24
17	Manitowaning, Agricultural Hall	East	Manitoulin	"	27
18	Wikwemikong, Council Chamber	East	Manitoulin	"	28
19	Green Bay	East	Manitoulin	"	29
20	Sheguiandah, Trotter's Hall	East	Manitoulin	"	30
21	Slash, School House	East	Manitoulin	July	1
22	Tehkummah, School House	East	Manitoulin	"	3
23	Mindemoya, School House	East	Manitoulin	"	4
24	St. Charles, Groselier Hall	West	Nipissing	"	7
25	Warren	West	Nipissing	"	8
26	Verner	West	Nipissing	"	10
27	Sturgeon Falls	West	Nipissing	"	11
28	North Bay, Widdifield Hall	West	Nipissing	"	12

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	President	Mrs. J. E. Brethour	Burford.
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	Vice-President	Mrs. John Steele	Muirkirk.
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	Vice-President	Mrs. H. Graef	Clifford.
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	Vice-President	Mrs. Wm. Burgoyne	Fenelon Falls.
	Sec.-Treas.	Mrs. W. T. Junkin	Fenelon Falls.
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	Sec.-Treas.	Mrs. D. C. Trew	Lindsay.
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	Vice-President	Mrs. J. Jameson	Hespeler.
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	Sec.-Treas.	Miss A. Whitelaw	Guelph.

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	Vice-President	Mrs. Geo. Wilson.....	Drayton.
	Sec.-Treas.	Mrs. S. M. Clemens...	Drayton.
Wentworth, North ...	President	Mrs. Jas. M. Donough	Westover.
	Vice-President	Mrs. John F. Thompson	W. Flamboro.
	Sec.-Treas.	Mrs. Wm. Wood	Rockton.
Wentworth, South ...	Hon. President	Mrs. John Hoodless...	Hamilton.
	President	Mrs. J. H. McNeilly..	Stoney Creek.
	Vice-President	Miss Smuck	Deerforth.
York, East	Sec.-Treas.	Miss J. R. Carpenter.	Fruitland.
	President	Mrs. Opie Sisley	Agincourt.
	1st Vice-President	Mrs. D. Marshall	Ellesmere.
	2nd Vice-President ...	Mrs. R. Richardson...	Wexford.
York, West	3rd Vice-President ...	Mrs. A. Jonson	Wexford.
	Sec.-Treas.	Miss Lulu Reynolds...	Scarboro Jct.
	President	Mrs. L. R. Lemaire ...	Weston.
	Vice-President	Mrs. W. Ellerby	Weston.
	Sec.-Treas.	Miss Helen Grubbe ...	Thistle town.

NORTHERN INSTITUTES.

Algoma Centre:

<i>Goulais Bay</i>	President	Mrs. McConn.	
	Vice-President	Mrs. N. Downey.	
	Sec.-Treas.	Mrs. Bert Downey.	
<i>MacLennan</i>	President	Mrs. C. Moore.	
	Vice-President	Mrs. W. Shier.	
	Sec.-Treas.	Miss Laura Napper.	
<i>South Tarantoros</i> ..	President	Mrs. T. C. Densmore..	Sault Ste. Marie.
	Vice-President	Miss Libbie Stewart...	Sault Ste. Marie.
	Sec.-Treas.	Miss Kate Walker...	Box 568. "

Algoma East:

<i>Sowerby</i>	President	Mrs. R. J. Cullis.	
	Vice-President	Mrs. T. Greig.	
	Sec.-Treas.	Mrs. Alex. J. Bell.	

Manitoulin East:

<i>Tehkummah</i>	President	Mrs. Jas. McCutcheon..	Sandfield.
	Vice-President	Mrs. David Hopkins..	Tehkummah.
	Sec.-Treas.	Miss Anna Tilson	Tehkummah.

Parry Sound East:

<i>Midlothian</i>	President		
	Sec.-Treas.	Miss Rousell.	
<i>Doe Lake</i>	President		
	Sec.-Treas.	Miss Alexander.	
<i>Powassan</i>	President	Mrs. J. A. Porter.	
	Vice-President	Mrs. W. H. Stewart.	
	Sec.-Treas.	Mrs. Milton Carr.	
<i>Arnstein</i>	President	Mrs. Debarnardo.	
	Sec.-Treas.	Miss A. Culen.	

BRANCH INSTITUTES AND SECRETARIES.

District Institute.	Name of Branch.	Secretary.
Brant, North	Moyle and Tranquility	Miss M. E. Good, Brantford P.O.
	Paris	Mrs. Geo. A. Taylor, Paris Station.
Brant, South	Mohawk	Mrs. T. H. Matt.
	Scotland	Mrs. Mac, Malcolm.
	Cathcart	Miss C. McPherson.
Bruce, Centre	Kincardine	Miss H. Wilson.
	Ropley	Miss J. Pritchard.
		Clover Valley P.O.
	Paisley	Mrs. J. C. Seymour.

District Institute.	Name of Branch.	Secretary
Bruce, North	Mar	Miss E. Adams.
	Tobermorey	Miss H. O. Young.
Bruce, South	Holyrood	Miss M. Langford.
	Walkerton	Miss Ethel McConnell.
Bruce, West	Tara	Miss Gertrude Brunton.
	Alberford	Miss Grace M. Broadfoot.
Dufferin	Horning's Mills	Miss M. Holmes.
	Perin	Miss Eva Ferris.
	Belassy	Miss Clara E. Maguire.
	Laurel	Mrs. Ed. Richardson.
	Honeywood	Miss E. S. Copeland.
	Camilla	Mrs. H. Anderson.
	Orangeville	Mrs. D. McPherson.
Dundas	Morewood	Mrs. W. E. McConnell.
Durham, East	Garden Hill	Miss Sarah E. Gray.
	Mount Pleasant	Mrs. W. H. Lowes.
	Springville	Mrs. T. Ruth.
	Baillieboro	Miss M. E. Lucas.
Durham, West	Selina	Miss Nora Werry.
	Hampton	Mrs. C. J. Kerslake.
Elgin, East	Springfield	Mrs. R. W. Shaw.
	Vienna	Miss B. McConnell.
	Port Burwell.	
Essex, North	Sparta	Miss Bernice Sanderson.
Grey, Centre	Essex	Miss Grace I. Wilson.
	Feversham	Miss Ella Alister.
	Flesherton	Mrs. Wm. Wilcox.
	Vandeleur	Mrs. R. Buchanan.
	Heathcote	Mrs. Robt. McAnslau.
	Ravenna	Mrs. A. R. Latter.
Grey, North	Kimberley	Mrs. W. T. Ellis.
	Deshoro	Miss Lizzie Hanbury.
	Chatsworth	Mrs. L. H. Collins.
	Kilsyth	Miss B. Fleming.
	Annan	Miss N. J. Cannon.
	St. Vincent	Miss M. Brooke.
	Massie	Mrs. Harry Winter.
Grey, South	Kemble	Mrs. James Gardner.
	Holstein	Mrs. W. H. Rogers.
	Elmwood	Miss Mary Dickson.
	Dromore	Miss K. L. Dixon.
Haldimand	Selkirk	Mrs. E. Kendrick.
	York	Miss E. Senn.
	Clanbrasil	Mrs. McConachie.
	DeCewsville	Mrs. O. Warner.
	Cheapside	Mrs. Geo. E. Pond.
	Nanticoke	Miss M. E. Kenny.
	Canfield	Mrs. W. M. Thompson.
Halton	Milton	Mrs. S. R. Bows.
	Appleby	Mrs. Dudley Alton.
	Georgetown	Miss Black.
	Acton	Mrs. Geo. Havill.
	Burlington	Miss Nora Campbell.
	Campbellville	Mrs. Robt. Menzies.
	Palermo	Mrs. Paul Campbell.
	Pastville	Mrs. A. A. Biggar.
	Bellerive	Mrs. R. Vivian.
Hastings, East	Foxboro	Miss Lottie Ashley.
	Tweed	Mrs. W. B. Huyck.
	Melrose	Miss N. Rav.
	Halston	Miss Effie Mount.
	Spencer's	Mrs. J. Collin.
	Read	Miss Mary Hanley.
	Springbrook	Mrs. Wm. Meiklejohn.
Hastings, North	Queensboro	Mrs. R. S. Allen.
	Wellman's Corners	Mrs. W. S. Dracup.
	Fordwich	Mrs. W. H. Downey.

District Institute.	Name of Branch.	Secretary.
Huron, East	Bluevale	Miss A. Aitcheson.
	Molesworth	Mrs. H. Granger.
	Ethel	Miss Nellie Laird.
	Constance	Mrs. Robert Clark.
Huron, South	Bayfield	Miss M. E. Campbell.
	Holmesville	Mrs. Wm. Connell.
Huron, West	Clinton	Mrs. F. W. Watts.
	Goderich	Miss M. E. Salkeld.
Kent, West	Port Alma	Mrs. John R. Shanks.
	Fletcher	Mrs. Wm. Mancell.
	Valetta	Miss M. Richards. Quinn.
	Wheatley	Miss Irene La Marche.
	Chatham	Miss Minnie Lee.
	Conway	Miss Mary McNaughton.
Lennox	Smithville	Miss Mary Tait.
Lincoln	Grimshy	Miss Jessie Palmer.
Middlesex, North	Ailsa Craig	Mrs. M. E. Graham.
	Parkhill	Mrs. Alf. Mathers.
	Beechwood	Miss Fannie Davies,
		Fernhill P.O.
	Coldstream	Mrs. Anna Marsh,
		Poplar Hill P.O.
Middlesex, West	Appin	Miss J. Galbraith.
Monck	Winger	Mrs. J. G. Wills.
	Wellandport	Mrs. C. V. Robbins.
Muskoka, South	Brackenrig	Miss Edith Edwards.
	Bracebridge	Miss Lily Yeoman.
	Germania	Miss Wise.
	Parkersville	Mrs. Oldham.
Northumberland, East	Brighton	Mrs. H. Scripture.
	Castleton	Mrs. J. L. Gerow.
Northumberland, West	Hagerman's Corners	Mrs. J. W. Philp,
		Precious Corners.
Ontario, South	Fenella	Mrs. M. Davey.
	Columbus	Mrs. L. Richardson.
	Greenbank	Miss E. M. Millar.
	Kinsale	Mrs. A. Parker.
Oxford, North	Kintore	Miss A. Henderson.
Oxford, South	Burgessville	Miss Emma Walkers,
		Beaconsfield.
	Springford	Mrs. S. Pratt.
	Tillsonburg	Mrs. W. D. Robertson.
	Brownsville	Mrs. W. A. Elliott.
	Mount Elgin	Miss M. B. Smith.
	Beechville	Miss N. Hastien.
	Currie's Crossing	Miss Ethel Siple.
	Vandecar	Miss M. G. Kneale.
	Otterville	Mrs. D. A. Culver.
	Alton	Mrs. A. C. Wilson.
	Brampton	Miss Susie Campbell.
	The Grange	Miss B. L. Kirkwood.
	Bolton	Miss L. Norton.
Perth, North	Hampstead	Miss L. C. Hart.
Perth, South	Tavistock	Mrs. Biffin.
	Kirkton	Miss L. Taylor.
Renfrew, North	Forster's Falls	Mrs. D. J. McKillop.
Simcoe, Centre	Wyebridge	Mrs. Jos. Soden.
	Vasey	Mrs. A. Mackie.
	LaFontaine	Miss Alice Le Camp.
	Wyevale	Mrs. W. H. Clute.
	Phelpston	Miss Mary Shanahan. Apt.
	Minesing	Miss Ruth Stenden.
	Thornton	Mrs. Jas. A. Paterson.
	Churchill	Mrs. W. S. Moore.
Simcoe, South	Ballyvaughan	Miss M. Groot.
	Everett	Miss Maesie Cameron.
Simcoe, West	Creemore	Mrs. A. Watson.

District Institute.	Name of Branch.	Secretary.
Simcoe, West.— <i>Con.</i>	New Lowell	Miss A. Macham.
	Nottawa	Miss Wiggins.
	Singhampton	Miss Margaret Edwards.
	Duntroon	Mrs. Colin McGregor.
Union	Sunnidale Corners	Miss Mary McLean.
	Harriston	Miss J. McCreedy.
Victoria, East	Jobcaygeon	Mrs. H. V. Cosh.
	Omamee	Mrs. Robt. Toole.
	Dunstord	Miss Ethel Thurston.
	Woodville	Miss Helen Campbell.
Victoria, West	Little Britain	Miss L. J. Rogers.
	Oakwood	Mrs. J. F. Brass.
	Cambray	Mrs. W. B. Feir.
	Lindsay	Mrs. T. Crandall.
Waterloo, North	Wellesley	Miss B. Bellinger.
	Winterbourne	Miss Ruth Pirie.
Welland	Sherkston	Miss Alma Sherk.
	Stevensville	Mrs. J. H. Tubby.
	Allanburg	Miss Mae Ware.
Wellington, Centre	Belwood	Mrs. S. W. Broadfoot.
	Marsville	Miss Annie Anthony.
	Erin	Mrs. Augusta McKechnie.
	Ospringe	Miss Emma Baldie.
Wellington, East	Coningsby	Miss Mary McArthur.
	Kenilworth	Miss Ida L. Farrell.
	Damascus	Miss M. Anderson.
	Grand Valley	Mrs. A. Park, Hereward.
Wellington, South	Paisley Block	Miss Minnie Cowan, Box 627, Guelph.
	Rockwood	Miss E. Cook.
	Aberfoyle	Miss Mary Ord.
	Marden	Mrs. Geo. North.
Wellington, West	Palmerston	Miss M. Murdoch.
	Moorefield	Miss B. Findlay.
	Glenallan	Miss C. M. Holt.
	Alma	Mrs. Robt. Rumble.
Wentworth, North	Westover	Miss B. M. Lindsay.
	West Flamboro	Mrs. J. F. Thomson.
	Lynden	Miss I. Mulholland.
Wentworth, South	Carluke	Mrs. Frank Hudspeth, Caledonia.
	Jerseyville	Miss Kate Petrie.
	Rimbrook	Miss Anna B. Smith.
	Tapleystown	Miss Fannie Pettit.
	Glanford	Miss Nora Choate, North Glanford.
	Hannon	Mrs. C. Glover.
	Black Heath	Miss Nellie R. Blair.
	Winona	Mrs. A. B. Foran.
York, East	Stoney Creek	Miss Clara Walker.
	Thornhill	Miss C. Clubine.
	Box Grove	Mrs. A. Reesor, Cedar Grove.
	Unionville	Mrs. P. Eckardt.
York, West	Markham	Mrs. L. Weber.
	Stouffville	Mrs. L. C. Weidman.
	Maple	Mrs. W. T. Cook.
	Kleinburg	Miss E. Wardlaw.
	Woodbridge	Miss Libby Duncan.

NORTHERN INSTITUTE BRANCHES.

Algoma, Centre	Echo Bay (MacLennan)	Mrs. R. J. Redman.
	East Korah (S. Tarantorus)	Miss M. Wilkins, Steelton.
	West Korah (S. Tarantorus)	Mrs. Hy. Knight, Jr., Sault Ste. Marie.
Algoma, East	Livingstone Creek (Sowerby)	Mrs. R. Gavin.
	Little Rapids (Sowerby)	Miss Gertrude King
Manitoulin, East	Green Bay	Mrs. L. W. Ferguson.
	Mindemova	Mrs. Caddle.

ANNUAL REPORT
OF THE
FARMERS' INSTITUTES
OF THE
PROVINCE OF ONTARIO
1905

PART III. MEETINGS AND STATISTICS.

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.

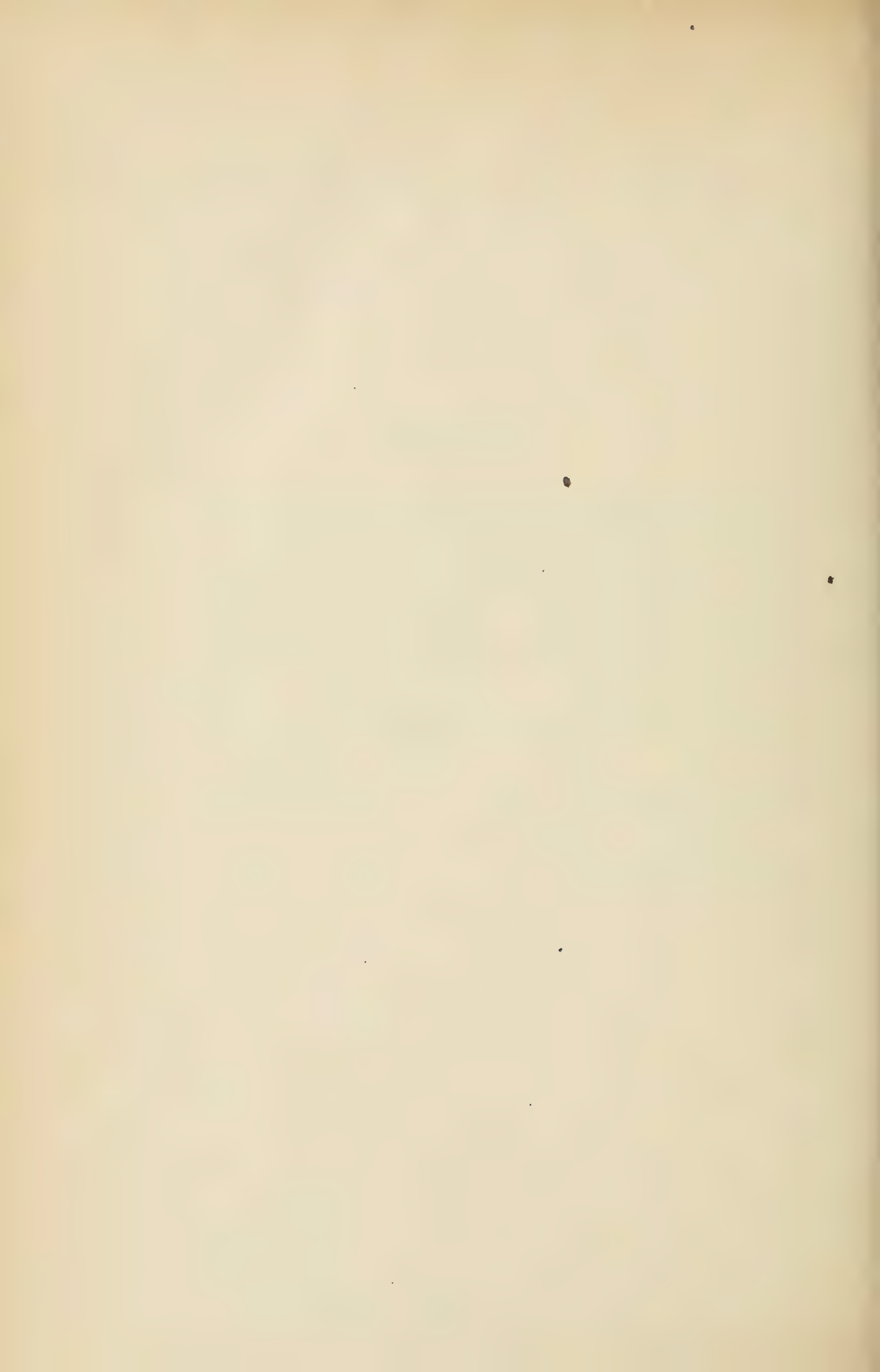




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TORONTO.

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FARMERS' INSTITUTES OF ONTARIO.

1905-1906.

ANNOUNCEMENT OF SUPERINTENDENT.

This volume contains a list of Farmers' Institute meetings to be held during the fall and winter months of 1905-6, as well as the speakers who will attend the same; a list of the subjects upon which the different speakers are prepared to give addresses; and a brief report of the Institute Convention held on the 6th and 7th of September last. The Officers and Directors of Institutes will find useful suggestions in the report of the Convention. We have included in the list of meetings some which were held during the past winter and summer, but have not previously been reported.

NEW WORK.—The Department of Farmers' Institutes undertook some special work in the way of holding meetings in the interests of farmers who are following special lines of agriculture. This special work was in the interest of fruit-growers, members of Horticultural Societies, and farmers who are making a specialty of growing either Alsike, Red Clover or Timothy for seed purposes. A statement regarding the object of these meetings, and a list of the same, will be found in this volume.

CONVENTION.—In the report of the Convention appearing herewith, will be found a statement regarding the condition of work throughout the Province. It will be seen that while the attendance and membership are somewhat below the previous year's record, the officers throughout the different parts of the Province show a marked enthusiasm, and predict large and interesting meetings during the coming campaign. The past two seasons have been most unfavorable so far as weather conditions are concerned; and in January last all meetings were cancelled on account of the holding of the Provincial elections. The postponement of the meetings had a detrimental effect upon the work.

SUMMER MEETINGS.—It was thought by the great majority of officers of Institutes in the northern portion of the Province that meetings could be held to the greater benefit of the farming community in the summer. Accordingly, as will be seen from the records of the meetings in this volume, arrangements were made for the holding of summer meetings in those sections; and, speaking generally, the attendance and interest was greater than at meetings held during the winter season. Speakers were also sent to several of the new sections in which Institute meetings had not previously been held, viz., Temiscaming District, vicinity of Port Arthur and Fort William, and in the valley of the Rainy River. The settlers in these new districts appreciated the consideration of the Department and showed their appreciation by forming Institutes. The farmers are eager to receive the publications from the Department and to have speakers sent.

WOMEN'S INSTITUTES.—The past year has witnessed a marked increase in the number of Women's Institutes and the membership of the same. We now have 69 district Women's Institutes, and 208 branches, with a total membership of 7,018 to the end of June, and about 8,500 at this date, November 1st. The attendance at the meetings has shown an increase of about 9,000 during the year. The efforts of the Department to improve home conditions, and assist the mothers and daughters of the home in making their daily routine of labor lighter and more pleasant; and assisting them in selecting literature dealing with matters which are of vital importance to them, such as the food values of different articles of diet, the necessity of ventilation and sanitation in the home; the value of sunlight, etc., etc., is a work which cannot be too highly commended and one which will have a great influence upon the next generation.

OFFICERS AND DIRECTORS.—We cannot impress too strongly, or too often, upon officers and directors that the success of the meetings depends to a great extent upon the assistance which they lend in making arrangements for the meetings, notifying and inviting others to attend, and taking some part in the programme. Copies of the rules and regulations will be sent to those who apply for the same.

GEO. A. PUTNAM.

REPORTS OF LOCAL FARMERS' INSTITUTES

Institute District.	Membership December, 1904.	Membership to June, 1906.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.			
						Cash on hand per last Report.	Members' fees.	Grants.	Receipts from excursions.
						\$	c	\$	c
1 Addington	71	75	5	431	19	40 35	18 75	50 00	
2 Algonquin Centre	76	139	8	680	35	101 87	19 75	70 00	
3 Altona East	108	137	10	967	40	16 97	28 75	15 00	
4 Amherst Island	51	30	5	512	19	84 85	5 50	50 00	
5 Brant, North	139	167	9	502	30	115 08	27 50	50 00	51 30
6 Brant, South	150	281	11	1,261	54	108 86	72 50	50 00	51 30
7 Brockville	150	86	7	558	24	10 86	21 50	50 00	
8 Bruce, Centre	98	169	8	464	25	199 78	24 00	50 00	
9 Bruce, North	149	110	6	305	12	183 74	33 75	50 00	39 64
10 Bruce, South	221	165	6	2,475	25	216 41	53 00	50 00	104 37
11 Bruce, West	275	262	8	827	27	171 04	65 50	50 00	94 02
12 Carleton	129	230	9	1,107	34	73 89	33 00	50 00	
13 Cornwall	87	89	6	1,135	29	18 60	22 00	50 00	
14 Deseronto	248	213	10	1,190	45	97 21	48 25	75 00	157 30
15 Dundas	199	174	6	1,011	26	216 11	43 50	49 85	
16 Durham, East	245	209	10	695	27	59 63	47 00	50 00	31 00
17 Durham, West	106	150	11	386	17	167 80	34 75	50 00	59 13
18 Egin, East	304	301	7	757	36	178 30	75 00	50 00	
19 Egin, West	164	139	7	716	33	33 51	31 25	50 00	
20 Essex, North	107	114	6	765	23	1 59	27 25	50 00	
21 Essex, South	189	155	9	1,054	42	60 19	41 75	50 00	
22 Frontenac	90	140	7	1,067	16	63 02	25 50	50 00	
23 Frontenac, C.	111	99	7	381	18	21 53	12 80	50 00	
24 Glenora	262	224	10	2,330	39	9 01	56 00	50 00	50 00
25 Grenville, South	163	140	11	794	34	11 09	34 50	50 00	
26 Grey, Centre	171	204	13	1,096	50	150 67	34 90	50 00	
27 Grey, North	318	248	12	543	31	122 40	63 25	50 00	50 00
28 Grey, South	305	237	10	1,966	37	274 42	62 75	50 00	162 75
29 Haldimand	288	381	11	2,075	80	515 20	84 50	50 00	201 20
30 Hallowell	697	542	12	1,742	41	100 52	117 40	50 00	216 80
31 Hastings, East	151	143	10	978	44	6 45	35 75	50 00	
32 Hastings, North	408	485	19	1,295	44	59 85	103 00	50 00	
33 Hastings, West	76	50	3	653	14	59 85	12 50	50 00	
34 Huron, East	354	305	10	2,096	39	180 88	73 00	50 00	103 36
35 Huron, South	408	317	9	1,890	43	381 07	75 00	50 00	91 94
36 Huron, West	245	122	7	980	34	66 70	30 00	50 00	103 21
37 Kent, East	210	185	9	730	44	6 20	41 75	50 00	
38 Kent, West	192	211	9	1,160	38	48 81	54 75	50 00	
39 Lambton, East	160	182	10	642	39	262 70	42 00	50 00	57 22
40 Lambton, West	384	284	11	950	63	262 89	71 00	50 00	72 90
41 Lanark, North	198	193	11	1,192	22		16 50	50 00	
42 Lanark, South	194	89	5	1,110	30		22 50	50 00	
43 Leeds, North and Grenville, N.	134	126	10	700	25		32 50	50 00	
44 Leeds, South	245	223	6	1,005	30		55 25	50 00	
45 Lennox	103	70	8	695	40		69 46	50 00	
46 Lincoln	249	234	7	975	42	171 35	62 00	55 00	30 00
47 Manitoulin, East	125	92	8	979	24	26 80		25 00	
48 Manitoulin, West	94	33	10	490	18	46 87	9 00	25 00	
49 Middlesex, East	344	327	12	1,323	47	229 80	70 25	50 00	133 20
50 Middlesex, North	352	350	12	1,758	51	378 57	85 25	50 00	103 15
51 Middlesex, West	205	175	8	850	26	52 57	42 50	50 00	
52 Monck	172	111	7	617	27		27 50	55 00	
53 Muskoka, Central	49	53	4	150	4	15 56	13 25	25 00	
54 Port Carling and Bala (Branch C. Muskoka)	37	24	5	240	13	5 38	3 00		
55 Muskoka, North	174	102				4 51	54 50	25 00	
56 Muskoka, South	73	102	5	252	12	24 69	21 00	35 00	
57 Nipissing West	75	71	7	257	12	1 02	16 00	25 00	
58 Norfolk, North	356	289	9	1,525	54	148 47	69 00	50 00	70 60
59 Norfolk, South	172	113	6	440	16	24 74	28 25	50 00	32 22
60 Northumberland, East	181	98	8	290	24	12 97	22 25	50 00	15 10
61 Northumberland, West	86	99	8	1,038	40	97 97	25 00	50 00	4 81
62 Ontario, North	339	263	11	379	28	252 31	52 20	75 00	217 55
63 Ontario, South	421	297	14	1,005	41	99 80	73 25	25 00	78 11

FOR THE YEAR ENDING JUNE 30, 1905.

Receipts.—Continued

Expenditure.

Miscellaneous.	Balance due Treasurer.	Total receipts.	Due Treasurer per last Report.	Expense for meetings.	Secretary's salary, etc.	Postage and stationery.	Printing.	Advertising.	Lecturers' expenses and wages.	Periodicals for members.	Miscellaneous.	Balance on hand.	No.
\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	
.....		109 10		11 00	20 00	8 35	8 00		7 61	1 86	15 45	36 89	1
.....		171 61		1 00	16 00	12 75	9 50			1 95	50 00	90 41	2
44 20		114 92		30 00	27 00	1 60				3 50		44 32	3
15 00		150 35		34 85	10 00	1 10	4 30				10 00	90 10	4
		243 86		62 13	23 60	4 70	26 43					85 01	5
5 33		287 99		22 00	73 85	5 67	35 51					62 41	6
		82 36		10 00	15 00	5 89	11 50					6 87	7
		386 93		62 10	50 25	5 00	29 75					189 28	8
1 05		308 18		16 90	40 75	9 83	17 25					95 44	9
		423 78		23 60	53 25	14 72	45 15					222 90	10
		380 56		2 00	38 15	8 31	8 50	9 60				31 05	11
		156 89			25 00	7 80	26 00					67 04	12
		90 60		5 75	27 20	2 50	13 50					2 50	13
4 21		381 97		60 89	56 41	7 27	24 00					39 15	14
6 99		316 45		28 00	30 00	4 63	24 75					141 74	15
		187 63		12 27	46 60	6 81	27 50					218 62	15
8 15		319 89		18 20	35 00		52 37					81 48	16
		303 30		36 85	31 50	2 58	20 25					185 75	17
		114 76		8 00	25 00	7 11	12 75					154 66	18
		78 84		13 70	15 00	1 15	10 00	2 50				47 10	19
		151 94		4 58	25 00	4 00	14 22					17 23	20
		138 52		11 00	20 00	2 80	8 50	36 31				55 81	21
		84 33			27 00	3 80	7 95	10 55				38 64	22
		165 01		48 00	36 00	75	20 65					26 78	23
		105 23		13 50	33 00	3 20	12 00					23 56	24
	9 64	257 09		119 10	22 50	3 91	16 70	3 00					25
	4 52	285 65		42 10	59 35	7 21	20 35						26
108 25		658 17		62 50	119 75	9 09	36 25	23 30				104 12	27
18 13		869 03		24 50	95 35	33 38	38 75	18 00				156 87	28
8 84		493 56		59 25	80 00	16 75	38 37	1 00				518 27	29
15 00	3 72	110 92		9 50	25 00	9 75	15 60					191 99	30
		153 00	33 85	4 75	50 00	4 40	19 68						31
		122 37		13 25	20 00	3 00	9 50					92 32	32
10 81		418 05		61 75	19 30	10 25	21 00	7 50				68 48	33
6 73		604 74		33 03	32 00	3 80	26 35					244 83	34
		249 91		38 00	58 00	9 04	11 15	24 50				365 97	35
		97 95		10 60	21 50	21 80	13 00					80 99	36
2 25		152 81		7 03	27 40	9 70	10 85					39 07	37
		411 92		34 20	30 00	5 36	8 00	3 50				39 70	38
		396 79		82 10	50 00	2 10	39 63					236 61	39
6 59		73 09	11 33	8 50	18 00	2 15	19 00	2 25				193 35	40
	25 43	97 93	6 93	7 85	25 00	4 00	27 00					11 56	41
71 26	27 75	181 51	13 40	3 50	10 00	2 70	18 00					42	
		105 25	13 91	37 84	15 00	2 50	20 50					30 44	
		136 96		51 13	17 50	4 85	13 50					49 08	
		318 35		16 00	30 00	6 85	13 75	15 50				196 35	
		45 80			12 50		5 43					19 47	
		80 87		27 00	10 00	1 73	9 50					32 84	
5 58		488 83		64 50	61 20	19 25	50 44					26 99	
11 76		628 73		50 75	121 40	8 20	21 00	1 25				336 55	
		145 07		23 40	37 00	6 19		17 10				43 23	
		82 50	4 47	12 40	27 00	5 50	6 25	3 00				14 52	
		53 81		3 00	12 00	2 50	3 50					17 31	
		8 38				1 85	2 75					2 28	
		84 01		2 75	37 50	3 00	5 00					21 16	
97		81 66		8 35	25 00	4 58	9 75					19 05	
		42 02			18 20	2 52	1 25					20 06	
		338 07		64 25	50 00	9 00	15 25	2 00				183 67	
		135 21		10 90	46 65	3 18	37 25					12 77	
24 55	27 90	152 77		7 50	34 45	8 03	28 25					60	
		157 78		16 75	18 00	4 85	15 75					101 48	
25 15		622 21		40 35	105 85	12 09	65 40	24 25				315 32	
		276 16		35 45	55 00	9 38	36 30					93 33	

REPORTS OF LOCAL FARMERS' INSTITUTES

Institute District.	Membership December, 1901.	Membership to June, 1905.	No. of meetings held.	Total attendance.	No. of papers read or addresses delivered.	Receipts.			
						Cash on hand per last report.	Members' fees.	Grants.	Receipts from excursions.
						\$ c.	\$ c.	\$ c.	\$ c.
64 Oxford, North.....	202	297	10	1,380	34	3 57	71 50	50 00	.....
65 Oxford, South.....	484	458	14	1,710	59	57 74	112 00	50 00	150 85
66 Parry Sound, East.....	276	214	19	1,343	68	127 83	28 00	34 00	115 25
67 Parry Sound, West.....	90	38	5	109	12	25 21	16 25	30 00	.....
68 Peel.....	493	411	12	2,162	56	76 44	103 25	50 00	158 45
69 Perth, North.....	300	279	11	1,615	41	239 79	69 25	50 00	76 50
70 Perth, South.....	329	244	8	1,834	38	234 49	60 00	50 00	115 25
71 Peterboro, East.....	117	122	7	1,605	37	9 54	26 50	50 00	31 00
72 Peterboro, West.....	173	181	7	1,175	35	4 89	44 75	50 00	31 00
73 Prescott.....	83	77	7	705	17	55 96	20 50	50 00	.....
74 Prince Edward.....	180	158	10	885	28	73 66	43 50	50 00	.....
75 Renfrew, North.....	86	87	7	631	18	34 32	21 25	50 00	.....
76 Renfrew, South.....	160	111	8	325	24	136 39	27 00	75 00	.....
77 Russell.....	156	134	6	850	21	.....	23 00	50 00	.....
78 Simcoe, Centre.....	285	311	11	1,023	40	242 18	53 00	25 00	165 00
79 Simcoe, East.....	96	77	8	228	18	124 22	18 75	25 00	101 55
80 Simcoe, South.....	186	122	6	706	21	26 96	29 25	25 00	16 00
81 Simcoe, West.....	219	217	8	1,302	41	416 12	61 50	50 00	131 01
82 Stormont.....	193	115	8	1,210	33	4 89	31 75	50 00	.....
83 St. Joseph Island.....	270	196	7	1,775	30	40 90	50 25	50 03	.....
84 Victoria, East.....	195	137	6	1,105	20	72	49 25	50 00	50
85 Victoria, West.....	120	135	6	737	37	19 40	44 75	50 00	25 40
86 Waterloo, North.....	547	562	13	3,144	52	173 95	142 50	50 00	83 70
87 Waterloo, South.....	800	635	16	2,155	54	85 93	193 00	50 00	101 85
88 Welland.....	306	350	11	1,141	59	217 75	84 75	50 00	140 28
89 Wellington, Centre.....	436	557	11	2,320	52	122 71	149 75	50 00	22 20
90 Wellington, East.....	214	414	9	1,081	47	5 90	103 50	75 00	4 40
91 Wellington, South.....	1,549	274	7	727	81	16 50	369 75	50 00	.....
92 Wellington, West.....	250	250	8	1,375	21	183 71	74 25	50 00	119 85
93 Wellington, West (Union Br.).....	192	139	6	800	19	93 05	31 25	37 50	46 60
94 Wentworth, North.....	329	331	11	2,490	38	4 17	78 25	50 00	.....
95 Wentworth, South.....	345	271	9	2,525	63	87 33	67 75	50 00	.....
96 York, East.....	257	228	10	1,030	41	142 12	44 00	50 00	94 55
97 York, West.....	208	169	8	840	40	70 20	32 50	50 00	89 90
Totals.....	22,713	19,793	845	102,008	3,209	9,535 50	5,008 55	4,596 38	4,316 42

FOR THE YEAR ENDING JUNE 30, 1905.—*Continued.*Receipts.—*Continued.*

EXPENDITURE

Miscellaneous.		Balance due Treasurer.		Total receipts.		Due Treasurer, per last Report.		Expense for meetings.		Secretary's salary, etc.		Postage and stationery.		Printing.		Advertising.		Lecturers' expenses and wages.		Periodicals for members.		Miscellaneous.		Balance on hand.		No.	
¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.	¢ c.		
		125 07								40 00	3 50			1 00	16 50							35 22	32	85 64			
3 20		373 79				84 90				55 00	29 62			12 75	54 40			35 75				54 27	45	10 65			
		305 08				30 65				60 00	11 65			29 70						3 25		5 00	164	33 00			
		71 46				21 00				15 00	5 00			5 00	1 00								24	46 67			
7 65		395 79				118 74				109 55	7 35			60 00						1 25		3 75	58	17 68			
4 00		439 54				28 50				63 40	3 42			26 30	50 60			49 45				72 70	136	17 69			
		459 74				78 65				20 00	13 00			15 00	35 70			36 85				10 00	255	54 70			
1 00		118 04				36 35				37 15	2 00			19 00				11 40		45		10 00	1	69 71			
9 00		139 64				37 00				30 00	5 50			25 75	24 75			10 75					1	89 72			
		126 46				19 55				24 70	42			3 00	3 50							3 30	68	94 75			
1 95		169 11				27 05				20 00	1 50			21 09									39	47 74			
		105 57				29 60				25 00	10 85			21 35									18	77 75			
		238 39				15 00				39 50	2 82			10 68								15	110	24 76			
	26 03	99 03	27 93			11 00				28 00	6 00			10 00				50 10							77		
		485 18				55 30				86 90	4 55			32 05				11 25				18 75	272	98 78			
		269 52				35 65				35 00	3 25			35 65				8 75				31 00	328	94 79			
		97 21				16 90				25 45	7 53			6 50								11 65	9	43 40			
6 15		664 78				69 30				71 50	8 55			19 44	7 00			24 75	36 50			161 15	323	59 81			
		86 64				21 25				29 50	2 50			11 50								2 50	16	39 82			
		141 18				4 00				25 00	4 47			12 00				8 00				18 98	28	75 46			
14 75		115 22				36 50				20 00	6 61			22 25				5 30				5 00	18	00 84			
		139 55				15 50				32 10	6 68			20 75				15 00				27 90	22	58 87			
		450 15				52 75				75 00	17 55			10 00	4 25			47 40				73 70	139	50 86			
7 36		438 14				58 45				156 65	13 98			16 50	32 00							50 41	140	15 87			
		492 78				64 40				60 05	5 00			12 62				47 50				10 05	272	58 88			
		344 66				47 15				60 70	9 85			10 75	25 90			48 80				55 45	8	06 89			
		188 80				10 50				40 00	1 35			22 65				10 75	9 00			45 65	34	20 90			
4 90		541 15				7 50				56 00	9 20			14 25						8 75		315 00	105	48 91			
		427 81				37 55				28 00	7 10			15 75	19 75			12 71				79 28	221	67 92			
1 80		210 20				18 00				30 00	5 30			10 75	1 50			15 00				20 15	100	00 96			
	16 00	148 42				26 50				25 00	16 65			35 50				13 75				5 00			94		
		205 08				47 00				63 09	11 83							18 67						61	49 96		
	46	331 13				54 70				39 10	6 51			50 00	6 75			28 20				35 00	140	84 00			
		242 60				33 75				56 75	14 10			42 25				9 35				30 30	36	65 97			

463 02 145 48 24,060 86 111 82 2,958 81 3,912 65 665 72 1,949 00 663 00 1,735 79 266 75 2,367 00 9,529 81

ATTENDANCE, MEMBERSHIP, ETC., 1904-5.

(See Report of Convention.)

The Institutes holding the largest number of meetings during the year ending June 30th, 1905, are:—

Hastings, North	19	Durham, West.....	11	Durham, East	10
Parry Sound, E.	19	Grenville, South	11	Glengarry	10
Waterloo, South	16	Haldimand	11	Grey, South	10
Ontario, South	14	Lambton, West	11	Hastings, East	10
Oxford, South	14	Lanark, North	11	Huron, East	10
Grey, Centre	13	Ontario, North	11	Lambton, East	10
Waterloo, North	13	Perth, North	11	Leeds, N., and Gren....	10
Grey, North	12	Simcoe, Centre	11	Manitoulin, West	10
Halton	12	Welland	11	Oxford, North	10
Middlesex, East	12	Wellington, Centre ...	11	Prince Edward	10
Middlesex, North	12	Wentworth, North	11	York, East	10
Peel	12	Algoma, East	10		
Brant, South	11	Dufferin	10		

The Institutes having the largest attendance at their meetings are as follows:—

	No. of Meetings.	Attendance.		No. of Meetings.	Attendance.
Waterloo, North	13	3,144	Wellington, Centre	11	2,320
Wentworth, South	9	2,525	Peel	12	2,162
Wentworth, North	11	2,490	Waterloo, South	16	2,155
Bruce, South	6	2,475	Huron, East	10	2,096
Glengarry	10	2,330	Haldimand	11	2,075

The Institutes having the largest membership to July, 1905, are:—

Waterloo, South	655	Haldimand	381	Simcoe, Centre	311
Waterloo, North	562	Middlesex, North.....	350	Huron, East	305
Wellington, Centre ...	557	Welland	350	Elgin, East.....	301
Halton	542	Wentworth, North ...	331	Norfolk, North	289
Hastings, North	485	Ontario, South	297	Lambton, West	284
Oxford, South	458	Oxford, South	297	Brant, South	281
Wellington, East	414	Middlesex, East.....	327	Perth, N.....	279
Peel	411	Huron, South	317	Wellington, S.....	274

The following Institutes show the smallest membership:—

Amherst Island.....	30	Nipissing, West.....	71	Renfrew, North.....	87
Manitoulin, West.....	33	Addington	75	Cornwall	89
Parry Sound, West ...	38	Muskoka, Centre	77	Lanark, South	89
Hastings, West	50	Prescott	77	Manitoulin, East	92
Frontenac, Centre ...	69	Simcoe, East	77	Northumberland, E....	98
Lennox	70	Brockville	86	Northumberland, W....	99

SPECIAL NORTHERN MEETINGS HELD IN 1905.

No. 1. W. F. Kydd, Henry Grose, Miss Smith.

1	Bala, Burgess' Hall	Port Carling	June 6
2	Port Carling, Orange Hall	Port Carling (afternoon)	" 7
3	Port Carling, Victoria Hall	Port Carling (evening)	" 7
4	Brackenrig, School House	Port Carling	" 8
5	Gravenhurst, Town Hall	South Muskoka	" 9
6	Germania, Wises' School House	South Muskoka	" 10
7	Bracebridge, Town Hall	South Muskoka	" 12
8	Baysville, Orange Hall	South Muskoka	June 13
9	Callander	East Parry Sound	" 15
10	Powassan, Stewart's Hall	East Parry Sound	" 16
11	Nipissing	East Parry Sound	" 17
12	Restoule	East Parry Sound	" 19
13	Loring, Russell Hall	East Parry Sound	" 20
14	Arnstein, School House	East Parry Sound	" 21
15	Golden Valley, School House	East Parry Sound	" 22
16	Commanda, School House	East Parry Sound	" 23
17	Trout Creek, Trussler's Hall	East Parry Sound	" 24
18	South River, Vincent's Hall	East Parry Sound	" 26
19	Sundridge, Orange Hall	East Parry Sound	" 27
20	Burk's Falls, Sharp's Hall	East Parry Sound	" 28
21	Midlothian, School House	East Parry Sound	July 3
22	Doe Lake, School House	East Parry Sound	" 4
23	Kearney	East Parry Sound	" 5
24	Emsdale, Agricultural Hall	East Parry Sound	" 6
25	Sprucedale, Agricultural Hall	East Parry Sound	" 7
26	Magnetawan	East Parry Sound	" 8

No. 2. T. G. Raynor, Dr. Hy. G. Reed, Miss L. D. Gray.

1	Walford, School House	East Algoma	June 7
2	Blind River	East Algoma	" 8
3	Iron Bridge, Orange Hall	East Algoma	" 9
4	Bellingham, D. Bell's House	East Algoma	" 10
5	Sowerby, Maccabbees' Hall	East Algoma	" 12
6	Livingstone Creek, School House	East Algoma	" 13
7	Little Rapids, School House	East Algoma	" 14
8	Alma Heights, School House	East Algoma	" 15
9	Desbarats	East Algoma	" 16
10	MacLennan, Hall	Centre Algoma	" 17
11	Bar River, Hall	Centre Algoma	" 19
12	Echo Bay, Hall	Centre Algoma	" 20
13	South Tarantorus, School House	Centre Algoma	" 21
14	East Korah, School House	Centre Algoma	" 22
15	Base Line, School House	Centre Algoma	" 23
16	Goulais Bay	Centre Algoma	" 24
17	Manitowaning, Agricultural Hall	East Manitoulin	" 27
18	Wikwemikong, Council Chamber	East Manitoulin	" 28
19	Green Bay	East Manitoulin	" 30
20	Sheguiandah, Trotter's Hall	East Manitoulin	" 30
21	Slash, School House	East Manitoulin	July 1
22	Tehkummah, School House	East Manitoulin	" 3
23	Mindemoya, School House	East Manitoulin	" 4
24	St. Charles, Groselier Hall	West Nipissing	" 7
25	Warren	West Nipissing	" 8
26	Verner	West Nipissing	" 10
27	Sturgeon Falls	West Nipissing	" 11
28	North Bay, Widdifield Hall	West Nipissing	" 12

No. 3. Andrew Elliott.

(Rainy River District.)

1	Fort Frances	June 8
2	Crozier's School House (5 miles w. of Fort Frances)	" 9
3	Devlin, Foresters' Hall	" 12
4	Emo, McEachern's Hall	" 13

SPECIAL NORTHERN MEETINGS. — *Continued.*

5 Barwick, Orange Hall	"	14
6 Stratton	"	15
7 Pinewood	"	16
8 Rapid River	"	19
9 Rainy River	"	20

No. 4. Prof. C. A. Zavitz, Prof. J. B. Reynolds.

(Temiscaming District.)

1 Haileybury, Orange Hall	July	5
2 New Liskeard Orange Hall	"	6
3 Hillview, School House	"	7
4 Milberta, School House	"	8
5 Uno Park, School House	"	10
6 Hanbury, School House	"	11
7 Earleton, School House	"	12
8 Heaslip Corners, School House	"	13
9 Hilliardtown, School House	"	14
10 Judge, at Mr. Judge's	"	15

No. 5. Andrew Elliott.

1 Utterson, Town Hall	Centre Muskoka (aft. and eve.)	October	11
2 Port Sidney, Smith's Falls	Centre Muskoka (afternoon)	"	12
3 Allansville, Allansville House	Centre Muskoka (evening)	"	12
4 Windermere, Windermere House	Centre Muskoka (afternoon)	"	13
5 Ufford, McKay's House	Centre Muskoka (evening)	"	13
6 Dunchurch, Kelsey Hall	West Parry Sound (afternoon)	"	17
7 McKellar, Hall	West Parry Sound (evening)	"	17
8 Broadbent, School House	West Parry Sound (afternoon)	"	18
9 Orrville, Town Hall	West Parry Sound (evening)	"	18
10 Falding, Rankin's Hall	West Parry Sound (afternoon)	"	19
11 Parry Sound, Union Hall	West Parry Sound (evening)	"	19
12 Carling, School House	West Parry Sound (afternoon)	"	20
13 McDougal, School House	West Parry Sound (evening)	"	20

No. 6. W. F. Kydd, Miss Blanche Maddock.

1 Richard's Landing, Town Hall	St. Joseph Island	October	6
2 Kentvale, Kent's Hall	St. Joseph Island	"	7
3 Carterton, Township Hall	St. Joseph Island	"	9
4 Tenby Bay, School House	St. Joseph Island	"	10
5 Marksville, Town Hall	St. Joseph Island	"	11
6 Gore Bay, Foresters' Hall	West Manitoulin (afternoon)	"	14
7 Gordon, School House No. 4	West Manitoulin (evening)	"	14
8 Barrie Island, School House	West Manitoulin	"	16
9 Ice Lake, School House	West Manitoulin	"	17
10 Kagawong, Hillard's Hall	West Manitoulin (afternoon)	"	18
11 Kagawong, No. 1 School House	West Manitoulin (evening)	"	18
12 Grimesthorpe, School House	West Manitoulin	"	19
13 Poplar School House	West Manitoulin	"	20
14 Evansville, School House	West Manitoulin	"	21
15 Silverwater, School House	West Manitoulin	"	23
16 Meldrum Bay, Foresters' Hall	West Manitoulin	"	24
17 Cockburn Island	West Manitoulin	"	25

No. 7. SPECIAL MEETINGS IN NORTH HASTINGS.

D. Drummond, J. G. Foster.

St. Ola	June	12	Maynooth	June	19
The Ridge	"	13	Monteagle Valley	"	20
Coe Hill	"	14	New Carlow	"	21
Paudash (Faraday Township) ...	"	15	Fort Stewart	"	22
J. Amable	"	16	McArthur's Mills	"	23
Bancroft	"	17			

SPECIAL NORTHERN MEETINGS.—Continued.

No. 8. LIVE STOCK JUDGING CLASSES.

H. S. Arkell, F. M. Logan.

Beachburg	June 9	Vars	June 16
Renfrew	" 10	Mosgrove	" 17
Cornwall Centre	" 12	Newington	" 19
Lancaster	" 13	Winchester	" 20
Vankleek Hill	" 14	Carleton Place	" 21
Maxville	" 15		

SPECIAL MEETINGS FOR FRUIT GROWERS.

Upon the recommendation of the Fruit Growers' Association, the Farmers' Institute Department arranged for a number of special meetings in the interests of fruit men in various parts of the Province. These places were selected upon the advice of a committee of the Association and meetings were held as indicated below:

Delegates:—A. E. Sherrington; P. J. Carey, Fruit Division, Ottawa.

Ingersoll	March 22	Churchill	March 29
Norwich	" 23	Collingwood	" 30
Cainsville	" 24	Thornbury	" 31
Oakville	" 25	Meaford	April 1
Clarkson	" 27	Owen Sound	" 3
Islington	" 28	Allenford	" 4

A. E. Sherrington, Walkerton.

Forest	January 27	Myrtle	March 8
Theftford	" 28	Whitby	" 9
Oshawa	March 6	Grange Hill	" 9
Pickering	" 7	Simcoe	May 11
Claremont	" 8	Burford	" 12

Delegates:—D. Johnson, Forest; A. Gifford, Meaford.

Tupperville	March 20	Blyth	March 29
Thamesville	" 21	Brussels	" 30
Dutton	" 22	Lucknow	" 31
Sparta	" 23	Walkerton	April 1
Appin	" 24	Paisley	" 3
Hderton	" 25	Port Elgin	" 4
Parkhill	" 27	St. Marys	" 5
Goderich	" 28		

HORTICULTURAL SOCIETIES.

A circular letter was addressed to the secretaries of Horticultural Societies throughout the Province, offering to furnish a speaker free of cost, except that incurred for entertainment during the stay of the lecturer. The following meetings were arranged for:—

	T. H. Race, Mitchell.		
Clarksburg	April 17	Belleville	April 26
Midland	" 19	Pictou	" 27
Orillia	" 20	Millbrook	" 28
Lindsay	" 21	Baymanville	" 29
Perth	" 24	Seaforth	May 9
Smith's Falls	" 25	Kincardine	" 10

Wm. Hunt, O.A.C., Guelph.

Elmira	April 25	Aylmer	April 21
Woodstock	" 18	Hespeler	May 1
Simcoe	" 1	Stratford	" 3
Port Dover	" 20		

Prof. H. L. Hutt, O.A.C., Guelph.

Grimsby	April 18	Niagara Falls	May 11
St. Catharines	May 10		

SEED GROWERS' MEETINGS.

Another special line of work was arranged in conjunction with the Dominion Department of Agriculture. In consultation with G. H. Clark, Dominion Seed Commissioner, arrangements were made for special meetings in the interests of farmers who make a practice of growing either Alsike, Timothy or Red Clover for seed purposes. These meetings, while not very largely attended, proved of great interest, and we trust that much good was accomplished thereby. The following topics were discussed at the meetings, which were held in fields:—

Short talks on the following topics:—

(a) The best methods of producing pure, strong seeds of clover, timothy and alsike, with special reference to the preparation of seed bed and kinds of seed used.

(b) Some of the weeds commonly found in clover fields, and the practical means of eradicating them.

(c) The marketing of pure commercial seeds.

(d) How to avoid the clover seed midge.

(e) Object of the Bill (No. 7) respecting the Inspection and Sale of Seeds.

Other topics relative to the growing of seeds may also be discussed.

Seed merchants and their representatives are especially invited to be present at these meetings, and give addresses from the commercial standpoint.

Farmers are requested to bring weeds and weed seeds to the meeting for identification. Meetings at 2 p.m. each day.

SPEAKERS: — Anthony Forster, Markham; L. H. Newman, of the Seed Branch, Department of Agriculture, Ottawa.

Place.	Owner of Field and Location.	Day and Date.
Warkworth	T. B. Carlaw, $\frac{1}{2}$ mile N. E.	Thursday, June 8
Wooler	A. B. Wessels	Friday, " 9
Napanee	H. Hunter, opposite Station	Saturday, " 10
Wellington	N. S. Harrington, opposite Station	Monday, " 12
Pictou	G. Cahoon, back of High School	Tuesday, " 13
Tweed .....	.....	Wednesday, " 14
Madoc	J. Whytock, back of Station	Thursday, " 15
Beaverton	Hodgkinson & Tisdale	Friday, " 16
Cannington	W. D. Burgess, $\frac{1}{2}$ mile E.	Saturday, " 17
Oakwood	Jas. Thorndyke, in village	Monday, " 19
Lindsay	E. H. Hopkins, Lot 23. Con. 4	Tuesday, " 20
Omamee	H. Laidley, $\frac{1}{2}$ mile N.	Wednesday, " 21
Sunderland	Ed. Hodgins, $\frac{1}{2}$ mile W.	Thursday, " 22
Port Perry	E. Beer, $\frac{1}{2}$ mile N.	Friday, " 23
Uxbridge	Jos. E. Gould	Saturday, " 24

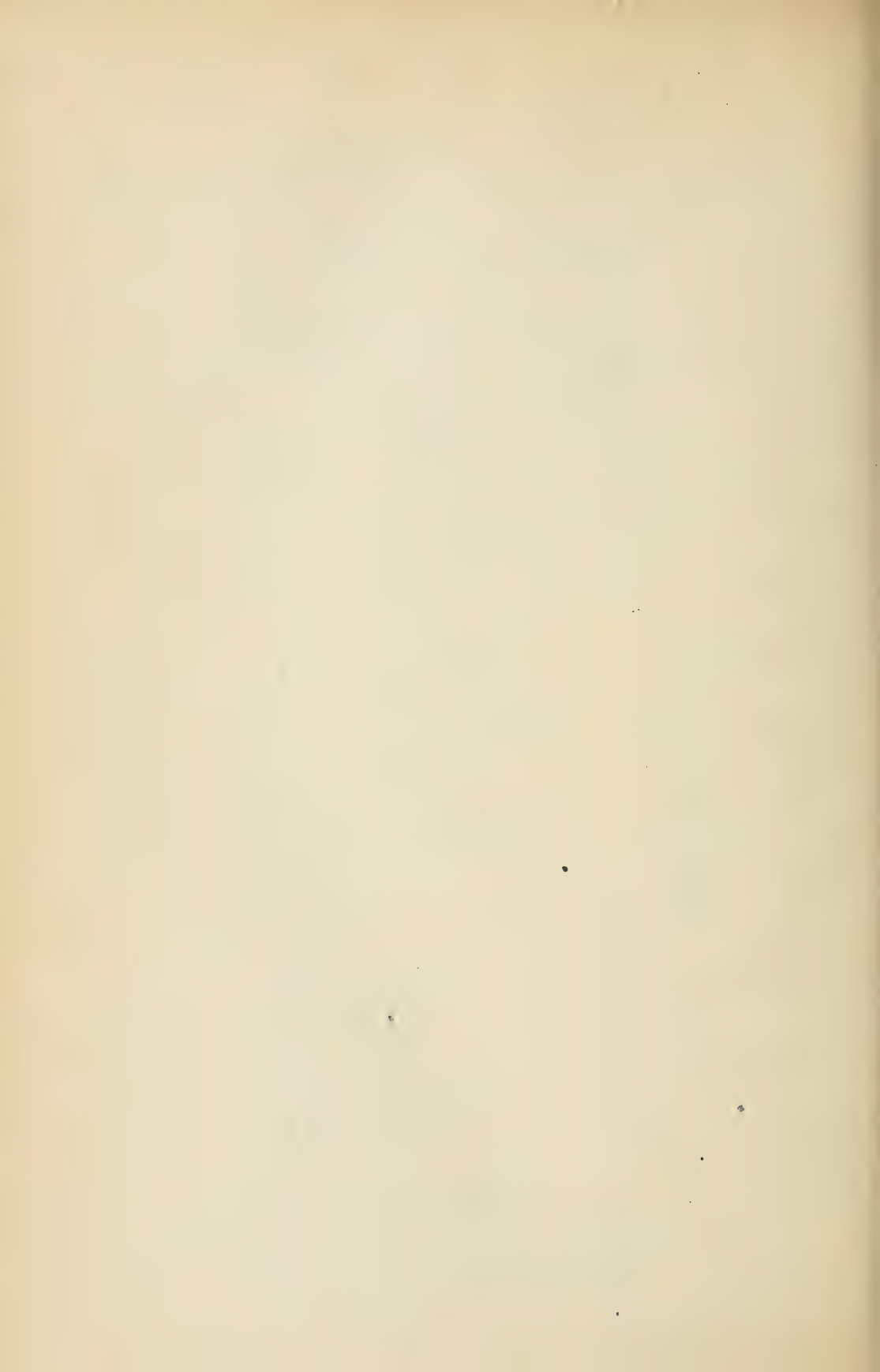
SPEAKERS:—W. S. Fraser, Bradford; W. McKillican, of the Seed Branch, Department of Agriculture, Ottawa.

Place.	Owner of Field and Location.	Day and Date.
Millbrook	James L. Fair	June 6
Garden Hill	Field, near village	" 7
Orono	D. Noble, $\frac{1}{2}$ mile N.	" 8
Enniskillen	D. Fice, $\frac{1}{2}$ mile N.	" 9
Columbus	M. Doolittle, $\frac{1}{2}$ mile S.	" 10
Pickering	R. J. Coad, opposite Gordon House	" 12
Unionville	Herbert Stevenson, $\frac{1}{2}$ mile E.	" 13
Stouffville	John Lewis, $\frac{1}{2}$ mile W.	" 14
Mt. Albert	E. Wagg, $\frac{1}{2}$ mile N.	" 15
Sutton West .....	.....	" 16
Newmarket	O. Rogers, adjoining cemetery	" 17
Cookstown	John Kidd, Lot 2. Con. 14	" 19
Minesing	Albert Orchard, near Post Office	" 20
New Lowell	A. Giffin, adjoining Railway	" 21
Stayner	Chas. Bellwood Lot 26. Con. 1, Nottawasaga	" 22
Clarksburg	Geo. Mitchell, Lot 29, Con. 10, Collingwood	" 23
Meaford	W. E. Bumstead, Lot 12. Con. 4. St. Vincent	" 24
Markdale	Thos. Mercer, Lot 106 Con. 2. Artemesa	" 26

SEED GROWERS' MEETINGS.—*Continued.*

SPEAKERS:—Henry Glendinning, Manilla; A. W. Mason, Norwich.

Place.	Owner of Field and Location.	Day and Date.
Welland	County Industrial Home	June 8
Cayuga	Field adjacent Court House Park	" 9
Waterford	Capt. Yorkes, $\frac{1}{2}$ mile N. and $\frac{1}{2}$ mile E.	" 10
Port Rowan	W. N. Buck	" 12
Burford	J. H. Wooley, $\frac{1}{2}$ mile N.	" 13
Aylmer	Chas. Timpany, Talbot St.	" 14
Dutton	D. Graham, $\frac{1}{2}$ mile S.	" 15
Ridgetown	E. Brigan, Town	" 16
Tilbury	J. Bandreaux, $\frac{1}{2}$ mile N.	" 17
Parkhill	A. Barret, $\frac{1}{2}$ mile S. W.	" 19
Ailsa Craig	Agricultural Society Ground	" 20
Crediton	Near village	" 21
Alliston	A. M. Robinson, across from Station ..	" 22
Tottenham	T. M. Greenaway, adjoining S. H.	" 23
Claude	H. McGregor, N. of Church	" 24
Maple	J. McNeil, 1 mile from village	" 26



INSTITUTE MEETINGS AND DELEGATES THEREFOR.

REGULAR MEETINGS.

DIVISION 1. John Campbell; John S. Pearce, Jan. 3—13; A. W. Mason, 15—22; C. M. MacRae, 23—31; Mrs. D. McTavish, 4, 6, 8, 11, 13; Miss A. Smith, 25, 29, 30, 31.

1 Kincardine, Town Hall	Centre Bruce	January 3
2 Ripley, Township Hall	Centre Bruce	4
3 Holyrood, Township Hall	South Bruce	5
4 Dungannon, Agricultural Hall	West Huron	6
5 Blyth, Industry Hall	West Huron	8
6 Brussels, Town Hall	East Huron	9
7 Gorrie, Town Hall	East Huron	10
8 Durham, Town Hall	South Grey	11-12
9 Hanover, Telford's Hall	South Grey	13
10 Wiarton, Town Hall	North Bruce	15
11 Hepworth, School House	North Bruce	16
12 Tara, Council Chambers	West Bruce	17
13 Port Elgin, Town Hall	West Bruce	18
14 Mildmay, Township Hall	South Bruce	19
15 Lakelet, Temperance Hall	Union	20
16 Lavery's School House	Union	22
17 Nassagaweya, Township Hall	Halton	23
18 Campbellville, Orange Hall	Halton	24
19 Kilbride, Orange Hall	Halton	25
20 Nelson	Halton	26
21 Strathcona	Halton	27
22 Sheridan	Halton	29
23 Norval, Orange Hall	Halton	30
24 Ballinafad	Halton	31

DIVISION 2. T. H. Mason; A. W. Smith, 15—23; Gavin Barbour, 9—13, 24—25; Miss I. Rife, 5 and 11; Miss B. Millar, 15—25.

1 Milverton, Grosch's Hall	North Perth	January 3
2 Shakespeare, Temperance Hall	North Perth	4
3 Plattsville, Town Hall	North Oxford	5
4 Mitchell, Town Hall	South Perth	6
5 St. Mary's, Town Hall	South Perth	8
6 Thorndale, Harding's Hall	E. Middlesex	9
7 Harrietsville, Oddfellows' Hall	E. Middlesex	10
8 Kintore, Foresters' Hall	North Oxford	11
9 Exeter, Town Hall	South Huron	12
10 Brucefield, Wilson's Hall	South Huron	13
11 Beechwood, Grange Hall	N. Middlesex	15
12 Park Hill, Town Hall	N. Middlesex	16
13 Ailsa Craig, Town Hall	N. Middlesex	17
14 Coldstream, Town Hall	N. Middlesex	18
15 Watford, Town Hall	East Lambton	19-20
16 Brigden, McKenzie's Hall	West Lambton	22-23
17 Walker's School House	W. Middlesex	24
18 Middlemiss, Village Hall	W. Middlesex	25

DIVISION 3. R. S. Stevenson; Fred A. Sheppard, 3—10; J. L. Hilborn, 11—24; Miss A. Smith, 4, 5, 12, 13, 15; Mrs. C. Campbell, 20 and 22.

1 Norwich, Town Hall	South Oxford	January 3-4
2 Mt. Elgin, Foresters' Hall	South Oxford	5
3 Courtland, Town Hall	North Norfolk	6
4 Delhi, Morgan's Hall	North Norfolk	8
5 Waterford, Town Hall	North Norfolk	9
6 Bealton, Bealton's Hall	North Norfolk	10
7 Avlmer, Town Hall	East Elgin	11-12
8 West Lorne, Township Hall	West Elgin	13
9 Shedden, Morrison's Hall	West Elgin	15
10 Buart, Town Hall	East Kent	16

REGULAR MEETINGS.—*Continued.*

11 Croton, Town Hall	East Kent	"	17
12 Valetta, Township Hall	West Kent	"	18
12 Romney, Township Hall	West Kent	"	19
14 Woodslee S. S.	N. Essex	"	20
15 Oldeastle, Town Hall	N. Essex	"	22
16 Kingsville, Town Hall	South Essex	"	23-24

DIVISION 4. Dr. Henry G. Reed; Wm. Elliott, 3 and 4; G. R. Cottrelle, 5—9; G. C. Caston, 10—23; Miss A. Smith, 8; Miss I. Rife, 15, 16, 19, 20.

1 St. George, Mechanics' Hall	North Brant	January	3
2 Onondaga, Town Hall	North Brant	"	4
3 Ohsweken, Council House	South Brant	"	5 & 6
4 Burford, Cornish Hall	South Brant	"	8 & 9
5 Ancaster, Town Hall	S. Wentworth	"	10
6 Stony Creek, Institute Hall	S. Wentworth	"	11
7 Campden, Fry's Hall	Lincoln	"	12
8 Queenston, School House	Lincoln	"	13
9 Welland, Court House	Welland	"	15
10 Stevensville, Johnson's House	Welland	"	16
11 Pelham Centre, Town Hall	Monck	"	17
12 Canboro, Town Hall	Monck	"	18
13 South Cayuga, Drake's Hall	Haldimand	"	19
14 Selkirk, Town Hall	Haldimand	"	20
15 Vittoria, Lecture Room	S. Norfolk	"	22
16 Langton, Town Hall	S. Norfolk	"	23

DIVISION 5. W. F. Kydd; C. M. McRae, 3—22; Miss L. Gray, 4, 5, 16, 23—31.

1 Acton, Town Hall	Halton	January	3
2 Hornby, Orange Hall	Halton	"	4
3 Waterdown, Township Hall	N. Wentworth	"	5 & 6
4 Rockton, Township Hall	N. Wentworth	"	8
5 Freulton, Maccabees' Hall	N. Wentworth	"	9
6 Aberfoyle, Town Hall (afternoon)	S. Wellington	"	10
7 Morriston, Town Hall (evening)	S. Wellington	"	10
8 Speedside, Town Hall (evening)	S. Wellington	"	11
9 Galt, Town Hall	S. Waterloo	"	12
10 New Dundee, Town Hall	S. Waterloo	"	13
11 Linwood, Spahr's Hall	N. Waterloo	"	15
12 Elmira, E. M. S. Hall	N. Waterloo	"	16-17
13 Glen Allan, Coot's Hall	W. Wellington	"	18
14 Drayton, Town Hall	W. Wellington	"	19 & 20
15 Rothsay, Temperance Hall	W. Wellington	"	22
16 Kenilworth, Township Hall	E. Wellington	"	23
17 Conn. Orange Hall	E. Wellington	"	24
18 Annan, Grange Hall	N. Grey (afternoon)	"	25
19 Leith, Grange Hall	N. Grey (evening)	"	25
20 Strathnairn, Town Hall	N. Grey	"	26
21 Owen Sound Council Chambers	N. Grey (afternoon)	"	27
22 Brown's School House	N. Grey (evening)	"	27
23 Kemble School House	N. Grey	"	29
24 Kilsyth, Town Hall	N. Grey	"	30
25 Desboro, Town Hall	N. Grey (afternoon)	"	31
26 Chatsworth, Town Hall	N. Grey (evening)	"	31

DIVISION 6.—(a) A. E. Sherrington; Dr. J. Standish, 3—30; Miss B. Maddock, Jan. 19 to Feb. 3.

1 Meaford, Town Hall	North Grey	January	3
2 Snyder's School House	North Grey	"	4
3 Thornbury, Town Hall	Centre Grey	"	5
4 Heathcote, Orange Hall	Centre Grey	"	6
5 Ravenna, Township Hall	Centre Grey	"	8
6 Kimberley, Union Hall	Centre Grey	"	9
7 Walter's Falls, Oddfellows' Hall	Centre Grey	"	10
8 Williamsford	Centre Grey	"	-

REGULAR MEETINGS.—Continued.

9	Flesherton, Township Hall	Centre Grey	January 12
10	Priceville, Watson's Hall	Centre Grey	" 13
11	Hopeville, Orange Hall	Centre Grey	" 15
12	Dundalk, Town Hall	Centre Grey	" 16
13	Badgeros, Orange Hall	Centre Grey	" 17
14	Maxwell, Orange Hall	Centre Grey	" 18
15	Midhurst, Patron's Hall	Centre Simcoe	" 19
16	Minesing, Workmen's Hall	Centre Simcoe	" 20
17	Phelpston, Murphy's Hall	Centre Simcoe	" 22
18	New Floss	Centre Simcoe	" 23
19	Crossland, Knox Hall	Centre Simcoe	" 24
20	Wyevale, Orange Hall	Centre Simcoe	" 25
21	Wyebridge, Orange Hall	Centre Simcoe	" 26
22	Lafontaine, Foresters' Hall	Centre Simcoe	" 27
23	Midland, Town Hall	Centre Simcoe	" 29
24	Vasey, Orange Hall	Centre Simcoe	" 30
25	Orillia, (2) Council Chambers	East Simcoe	Jan. 31 & Feb. 1
26	New Lowell, Town Hall	West Simcoe	February 2
27	Stayner, Stewart's Hall	West Simcoe	" 3

DIVISION 6.—(b) G. C. Caston; J. F. Lavery, V.S.

1	Aspdin, Clifton Hall	North Muskoka	January 31
2	Stisted, Township Hall	North Muskoka	February 1
3	Huntsville, Court House	North Muskoka	" 2
4	Brunel, No. 5 School House	North Muskoka	" 3
5	Birkendale, The Hemlock	North Muskoka	" 5
6	Hillside, School House	North Muskoka	" 6
7	Novar, Cowan's	North Muskoka	" 7

DIVISION 7. Henry Glendinning; W. F. Kydd; Mrs. Jean Joy, Nov. 27 & 28.
Dec. 5 & 6.

1	Shelburne, Town Hall	Dufferin	November 27
2	Orangeville, Town Hall	Dufferin	" 28
3	Alton, Science Hall	Peel	" 29
4	Streetsville, Oddfellows' Hall	Peel	" 30
5	Woodbridge, Orange Hall	West York	December 1
6	Weston, Dufferin Hall	West York	" 2
7	Newmarket	North York	" 4
8	Agincourt, Temperance Hall	East York	" 5
9	Stouffville, Auditorium	N. & E. York	" 6 & 7
10	Goodwood, Township Hall	North Ontario	" 8
11	Sunderland, Township Hall	North Ontario	" 9
12	Bethany, Town Hall	East Durham (afternoon)	" 11
13	Pontypool, Orange Hall	East Durham (evening)	" 11
14	South Monaghan, S. S. Hall	East Durham (afternoon)	" 12
15	Millbrook, Town Hall	East Durham (evening)	" 12
16	Kendal, Foresters' Hall	West Durham (afternoon)	" 13
17	Orono, Town Hall	West Durham (evening)	" 13
18	Bowmanville, Royal Templars' Hall	West Durham (afternoon)	" 14
19	Courtice, Temperance Hall	West Durham (evening)	" 14
20	Bloomfield, Town Hall	Prince Edward	" 15 & 16
21	Ameliasburg, Town Hall	Prince Edward	" 18

DIVISION 8. C. W. Nash; W. C. Shearer; Miss Laura Rose, 4, 5, 7, 11.

1	Oakwood, Township Hall	West Victoria	November 30
2	Lindsay, Town Hall	West Victoria	December 1 & 2
3	Bobcaygeon, Town Hall	East Victoria	" 4
4b	Fenelon Falls, Dickson's Hall	East Victoria	" 5 & 6
5	Lakefield, Town Hall	West Peterboro	" 7
6	Peterboro (Judging Class)	West Peterboro (afternoon)	" 8
7	North Monaghan, Town Hall	West Peterboro (evening)	" 8
8a	Peterboro, Council Chamber	West Peterboro (afternoon)	" 9
9	Warsaw, Town Hall	East Peterboro	" 11
10a	Keene, Town Hall	East Peterboro	" 12 & 13

REGULAR MEETINGS.—*Continued.*

11a Warkworth, Town Hall	East Northumberland	" 14 & 15
12 Menie, Lamb's Hall	East Northumberland	" 16
13 Stirling, Music Hall	North Hastings	" 18
14a Eldorado, Town Hall	North Hastings	" 19 & 20

Delegates for special sessions in the interests of dairymen on the afternoon and evening of the second day of two-day meetings.

a. G. G. Publow, Kingston.

b. J. W. Mitchell, Kingston.

DIVISION 9. Duncan C. Anderson; Geo. Carlaw; Miss Maddock, 18 and 20.

1a Sydenham, Township Hall	Frontenac	November 27 & 28
2 Sunbury, Township Hall	Frontenac	" 29
3 Emerald, Cheese Factory	Amherst Island	" 30
4 Stella, Town Hall	Amherst Island	December 1 & 2
5a Napanee, Town Hall	Lennox	" 4 & 5
6 Selby, Town Hall	Lennox	" 6
7 Newburgh, Finkle's Hall	Addington	" 7
8c Enterprise, Merrill's Hall	Addington	" 8 & 9
9c Tweed, Town Hall	East Hastings	" 11 & 12
10 Plainfield, Oddfellows' Hall	East Hastings	" 13
11 Wallbridge, Town Hall	West Hastings	" 14
12a Frankford, Curry's Hall	West Hastings	" 15 & 16
13a Grafton, Town Hall	West Northumberland	" 18 & 19
14 Gore's Landing, Town Hall	West Northumberland	" 20

Delegates for special sessions in the interests of dairymen on the afternoon and evening of the second day of two-day meetings.

a. G. G. Publow, Kingston.

c. L. A. Zufelt, Chesterville.

DIVISION 10. T. G. Raynor; J. L. Warren.

1 Elphin, Public Hall	North Lanark	November 27
2c McDonald's Corners, Agricultural Hall	North Lanark	" 28 & 29
3a Perth, Town Hall	South Lanark	" 30
4 Smith's Falls, Town Hall	South Lanark	Dec. 1 & 2
5d Merriekville, Town Hall	North Leeds	" 4 & 5
6 Kemptville, Town Hall	North Leeds	" 6
7e Spencerville, Town Hall	South Grenville	" 7 & 8
8 North Augusta, Masonic Hall	South Grenville	" 9
9f Lansdowne, Town Hall	South Leeds	" 11 & 12
10b Lyn, School House	Brockville	" 13 & 14
11 Athens, School House	Brockville	" 15
12 Delta, Town Hall	South Leeds	" 16
13 Piccadilly, Town Hall	Centre Frontenac	" 18
14 Fermoy, Town Hall	Centre Frontenac	" 19 & 20

Delegates for special sessions in the interests of dairymen on the afternoon and evening of the second day of two-day meetings.

a. G. G. Publow, Kingston.

d. J. H. Echlin, Carleton Place.

b. J. W. Mitchell, Kingston.

e. D. M. Wilson, Kemptville.

c. L. A. Zufelt, Chesterville.

f. A. W. Woodard, Montreal, Q.

DIVISION 11. D. Drummond; Dr. J. Standish.

1 Alfred	Prescott	November 23
2c Vankleek Hill, Town Hall	Prescott	" 24 & 25
3f Alexandria, Town Hall	Glengarry	" 27 & 28
4 Moose Creek	Stormont	" 29
5c Avonmore, Beaver Hall	Stormont	Nov. 30 & Dec. 1
6 Metcalfe, Town Hall	Russell	December 2
7c Russell, Town Hall	Russell	" 4 & 5
8d Renfrew	South Renfrew	" 6 & 7

REGULAR MEETINGS.—*Continued.*

9d Beachburg, Town Hall	North Renfrew	8 & 9
10 Westmeath, Public Hall	North Renfrew	11
11 Richmond, Town Hall	Carleton	12 & 13
12 North Gower, Town Hall	Carleton	14
13f Mountain, Hyslop's Hall	Dundas	15 & 16
14 Morewood, Foresters' Hall	Dundas	18
15c South Branch, Patrons' Hall	Cornwall	19 & 20
16 Harrison's Corners	Cornwall	21
17 Bainsville, Sangster's & McQuaig's Hall	Glengarry	22

Delegates for special sessions in the interests of dairymen on the afternoon and evening of the second day of two-day meetings.

c. L. A. Zufelt, Chesterville. f. A. W. Woodard, Montreal, Q.
d. J. H. Echlin, Carleton Place.

SUPPLEMENTARY MEETINGS.

DIVISION 1. Thos. McMillan; J. W. Clark; Miss L. Rose, Nov. 28—Dec. 1.

1 Gillie's Hill, Township Hall	Centre Bruce	November 28
2 Paisley, Town Hall	Centre Bruce	29
3 Glamis, Methodist Church	Centre Bruce	30
4 Bervie, Orange Hall	Centre Bruce	December 1
5 Kintail, Young's Hall	West Huron	2
6 St. Helen's	West Huron	4
7 Wingham, Town Hall	West Huron	5
8 Londesborough, Bruce's Hall	West Huron	6
9 Holmesville, Wilson's Hall	West Huron	7
10 Carlow, Township Hall	West Huron	8

DIVISION 2. Major James Sheppard; Miss L. D. Gray.

1 Metz	Centre Wellington	December 5
2 Ospringe	Centre Wellington	6
3 Marsville	Centre Wellington	7
4 Hillsburg	Centre Wellington	8

DIVISION 3. W. F. Stephen, Feb. 1—22; Thos. McMillan, 1—14; John Gardhouse, 15—22.

1 Ayton, Doersam's Hall	South Grey	February 1
2 Holstein, Agricultural Hall	South Grey	2
3 Dromore, Russell Hall	South Grey	3
4 Drew, Temperance Hall	Union	5
5 Clifford, Town Hall	Union	6
6 Harriston, Town Hall	Union	7
7 Lucknow, Town Hall	South Bruce	8
8 Teeswater, Town Hall	South Bruce	9
9 Belmore, Foresters' Hall	South Bruce	10
10 Walkerton, Town Hall	South Bruce	12
11 Cargill, Public Library	South Bruce	13
12 Elmwood, Meihlhausen's Hall	South Bruce	14
13 Mar, School House	North Bruce	15
14 Spry, School House	North Bruce	16
15 Lion's Head, Town Hall	North Bruce	17
16 Allenford, Orange Hall	West Bruce	19
17 Burgoyne, Church Vestry	West Bruce (afternoon)	20
18 Southampton, Town Hall	West Bruce (evening)	20
19 Tiverton, Town Hall	West Bruce	21
20 Underwood, Town Hall	West Bruce	22

SUPPLEMENTARY MEETINGS.—*Continued.*

DIVISION 4. R. S. Stevenson; Erland Lee, 2—9; J. W. Clark, 10—26; Miss A. Smith, 2—9.

1 Granton, Harman Hall	North Middlesex ..	February 2
2 Lucan, Town Hall	North Middlesex ..	" 3
3 West McGillivray, Town Hall	North Middlesex ..	" 5
4 Greenway, Wilson's Hall	North Middlesex ..	" 6
5 Sylvan, Maccabees' Hall	North Middlesex ..	" 7
6 Adelaide, Town Hall	North Middlesex ..	" 8
7 Lobo, Masonic Hall	North Middlesex ..	" 9
8 Sarnia, Council Chamber	West Lambton (afternoon) ..	" 10
9 Bunyan, School House	West Lambton (evening) ..	" 10
10 Courtright, Stewart's Hall	West Lambton ..	" 12
11 Wilkesport, Hamilton Hall	West Lambton ..	" 13
12 Beachers, Foresters' Hall	West Lambton ..	" 14
13 Rutherford, Township Hall	West Lambton ..	" 15
14 Oakdale, S. S. No. 5	West Lambton ..	" 16
15 Petrolea, Council Chamber	West Lambton ..	" 17
16 Inwood, Orange Hall	East Lambton ..	" 19
17 Cairo, Town Hall	East Lambton ..	" 20
18 Alvinston, Code Hall	East Lambton ..	" 21
19 Wyoming, Batter's Hall	East Lambton ..	" 22
20 Uttoxeter, Orange Hall	East Lambton ..	" 23
21 Ravenswood, School House	East Lambton ..	" 24
22 Arkona, School House	East Lambton ..	" 26

DIVISION 5. Duncan C. Anderson; Simpson Rennie, 1—6; Wm. Elliott, 7—13; G. Barbour, 14—20.

1 Millbank, Town Hall	North Perth ..	February 1
2 Atwood, Mitchell Hall	North Perth ..	" 2
3 Gowansdown, Town Hall	North Perth ..	" 3
4 Carthage, Foresters' Hall	North Perth ..	" 5
5 Rostock, Town Hall	North Perth ..	" 6
6 Hampstead, School House	North Perth ..	" 7
7 Tavistock, Public School House	South Perth ..	" 8
8 Sebringville, Foresters' Hall	South Perth ..	" 9
9 Fullarton, Township Hall	South Perth ..	" 10
10 Staffa, Public Hall	South Perth ..	" 12
11 Kirkton, Public Hall	South Perth ..	" 13
12 Farquhar, Public Hall	South Huron ..	" 14
12 Dashwood, Moser's Hall	South Huron ..	" 15
14 Zurich, Town Hall	South Huron ..	" 16
15 Hensall, Miller's Hall	South Huron ..	" 17
16 Varna, Temperance Hall	South Huron ..	" 19
17 Strong's Hall	South Huron ..	" 20

DIVISION 6. John Campbell; J. N. Paget, 1—6; A. E. Sherrington, 7—22; Miss I. Rife, 2, 3, 5, 9.

1 Princeton, Town Hall	North Oxford ..	February 1
2 Drumbo, Town Hall	North Oxford ..	" 2
3 Innerkip, Foresters' Hall	North Oxford ..	" 3
4 Bright, Duncan's Hall	North Oxford ..	" 5
5 Cassel, School House	North Oxford ..	" 6
6 Hickson, Foresters' Hall	North Oxford ..	" 7
7 Embro, Town Hall	North Oxford ..	" 8
8 Thamesford, Foresters' Hall	North Oxford ..	" 9
9 Wellburn, German's Hall	East Middlesex ..	" 10
10 Ilderton, Foresters' Hall	East Middlesex ..	" 12
11 The Grove, School House	East Middlesex ..	" 13
12 Nilestown, Town Hall	East Middlesex ..	" 14
13 Glanworth, Foresters' Hall	East Middlesex ..	" 15
14 Wilton Grove, Presbyterian Church	East Middlesex ..	" 16
15 Mt. Brydges, Town Hall	West Middlesex ..	" 19
16 Appin, Town Hall	West Middlesex ..	" 20
17 Glencoe, Town Hall	West Middlesex ..	" 21
18 Wardsville, Village Hall	West Middlesex ..	" 22

SUPPLEMENTARY MEETINGS.—*Continued.*

DIVISION 7. Major Jas. Sheppard; Anson Groh; Miss L. Gray, 1—5.

1	Straffordville, Town Hall	East Elgin	February	1
2	Mount Salem, Templars' Hall	East Elgin	"	2
3	Sparta, Sparta Hall	East Elgin	"	3
4	Mapleton, School House	East Elgin	"	5
5	Middlemarch, Grange Hall	West Elgin	"	6
6	Dutton, Town Hall	West Elgin	"	7
7	Rodney, Township Hall	West Elgin	"	8
8	Highgate, Township Hall	East Kent	"	9
9	Ridgetown, Township Hall	East Kent	"	10
10	Blenheim, Township Hall	East Kent (afternoon)	"	12
11	Bridge End, Hall	East Kent (evening)	"	12
12	Zone, Township Hall	East Kent	"	13
13	Thamesville, Town Hall	East Kent	"	14
14	Tupperville, Hall	West Kent	"	15
15	Eberts, Township Hall	West Kent	"	16
16	Baldoon, Bear Creek	West Kent	"	17
17	Raleigh, Union Hall	West Kent	"	19
18	Wheatley, Gibson's Hall	West Kent & South Essex	" 20 & 21	
19	Leamington, Town Hall	South Essex	"	22
20	Harrow, Town Hall	South Essex	"	23
21	Amherstburg, Town Hall	South Essex	"	24
22	Essex, I.O.O.F.	South Essex	"	26
23	School No. 5, Maidstone	North Essex	"	27
24	Comber, Town Hall	North Essex	"	28
25	Belle River, Town Hall	North Essex	March	1
26	Tecumseh, St. Jean's	North Essex	"	2

DIVISION 8. W. F. Kydd, 1—24; T. H. Mason, Feb. 26 to March 7; Miss B. Maddock, Feb. 1—Mar. 7.

1	Springvale, Chosen Friends' Hall	Haldimand	February	1
2	Jarvis, Council Chamber	Haldimand	"	2
3	Sandusk, School House	Haldimand	"	3
4	Fisherville, Town Hall	Haldimand	"	5
5	DeCewsville, Town Hall	Haldimand	"	6
6	Canfield, McDonald's Hall	Haldimand	"	7
7	Pelcher's School House	Haldimand	"	8
8	Caledonia, Association Hall	Haldimand	"	9
9	Falkland, School House	South Brant	"	10
10	Scotland, Foster's Hall	South Brant	"	12
11	Burtch, School House	South Brant	"	13
12	Harley, Town Hall	South Brant	"	14
13	Cathcart, Foresters' Hall	South Brant	"	15
14	Vandecar, Methodist Church	South Oxford	"	16
15	Burgessville, Oddfellows' Hall	South Oxford	"	17
16	Beachville, Town Hall	South Oxford	"	19
17	Ingersoll, Town Hall	South Oxford	"	20
18	Folden's Corners, Folden's Hall	South Oxford	"	21
19	Brownsville, Methodist Church	South Oxford	"	22
20	Otterville, Town Hall	South Oxford	"	23
21	Springford, Town Hall	South Oxford	"	24
22	Tillsonburg, Town Hall	South Oxford	"	26
23	Maybee's School House	North Norfolk	"	27
24	Fairground, Town Hall	South Norfolk	"	28
25	Port Rowan, Town Hall	South Norfolk	March	1
26	Simcoe, Council Chamber	North Norfolk	"	2
27	Port Dover, Town Hall	South Norfolk	"	3
28	Tyrrell, Tyrrell Hall	North Norfolk	"	5
29	Windham Centre, Town Hall	North Norfolk	"	6
30	Kelvin, Kelvin Hall	North Norfolk	"	7

SUPPLEMENTARY MEETINGS.—*Continued.*

DIVISION 9. T. H. Mason, 1—24; C. W. Nash; W. F. Kydd, Feb. 26 to Mar. 9; Miss G. Gray, 17 and 19.

1 Grimsby, Society Hall	Lincoln	February 1
2 Beamsville, Town Hall	Lincoln	" 2
3 Jordan, McIver's Hall	Lincoln	" 3
4 Grantham, Orange Hall	Lincoln	" 5
5 Virgil, Public Hall	Lincoln	" 6
6 Niagara Falls, Township Hall	Welland	" 7
7 Willoughby, Township Hall	Welland	" 8
8 Allanburg, Township Hall	Welland	" 9
9 Crowland, Township Hall	Welland	" 10
10 Quaker Road School House	Welland	" 12
11 Ridgeway, Township Hall	Welland	" 13
12 Brown Road School House	Welland	" 14
13 Humberstone, Township Hall	Welland	" 15
14 Dunnville, Town Hall	Monck	" 16
15 Marshville, Town Hall	Monck	" 17
16 Wellandport, Misener's Hall	Monck	" 19
17 Smithville, Brants	Monck	" 20
18 Tapleystown, Old Church	South Wentworth	" 21
19 Barton, No. 6 School House	South Wentworth	" 22
20 Winona, Institute	South Wentworth	" 23 & 24
21 Binbrook, Temperance Hall	South Wentworth	" 26
22 Glanford, Town Hall	South Wentworth	" 27
23 Carlisle, School House	South Wentworth	" 28
24 Jerseyville, Waite's Hall	South Wentworth	March 1
25 Lynden, Reivel's Hall	North Wentworth	" 2
26 Scott's School House	North Wentworth (afternoon)	" 3
27 Sheffield School House	North Wentworth (evening)	" 5
28 Kirkwall, School House	North Wentworth	" 6
29 Westover, K.O.T.M. Hall	North Wentworth	" 7
30 Millgrove, Town Hall	North Wentworth	" 8
31 Carlisle, Orange Hall	North Wentworth	" 9

DIVISION 10. D. Drummond, Feb. 8 to Mar. 2; Dr. J. Standish; Mrs. J. Joy, Feb. 22 to March 2.

1 Roseville, School House	South Waterloo	February 1
2 Ayr, McGregor's Hall	South Waterloo	" 2
3 Branchton, Foresters' Hall	South Waterloo	" 3
4 Preston, Town Hall	South Waterloo	" 5
5 Hespeler, Temperance Hall	South Waterloo	" 6
6 Kossuth, Hotel	South Waterloo	" 7
7 Breslau, Old Church	South Waterloo	" 8
8 Strasburg, Hall	South Waterloo	" 9
9 Mannheim, Hall	South Waterloo	" 10
10 Baden, Hall	South Waterloo	" 12
11 St. Augusta, Hall	South Waterloo	" 13
12 New Hamburg, Fell's Hall	South Waterloo	" 14
13 Haysville, Hall	South Waterloo	" 15
14 Philipsburg, Town Hall	South Waterloo	" 16
15 Mulligan	North Brant (afternoon)	" 17
16 Langford	North Brant (evening)	" 17
17 Cainsville	North Brant	" 19
18 White School House	North Brant (afternoon)	" 20
19 Moyle's School House	North Brant (evening)	" 20
20 Mar's School House	North Brant (afternoon)	" 21
21 Glenmorris	North Brant (evening)	" 21
22 Wellesley, Town Hall	North Waterloo	" 22
23 Hawkesville	North Waterloo	" 23
24 St. Jacob's, Wideman's Hall	North Waterloo	" 24
25 Winterbourne, Lecture Room	North Waterloo	" 26
26 Elora, Armory	Centre Wellington	" 27
27 Belwood, Town Hall	Centre Wellington	" 28
28 Orton, Town Hall	Centre Wellington	March 1
29 Erin, Town Hall	Centre Wellington	" 2

SUPPLEMENTARY MEETINGS. — *Continued.*

DIVISION 11. Dr. Henry G. Reed: A. C. Hallman, 1—19; Hy. Grose, Feb. 20 to March 2; Miss G. Gray, Feb. 1—2; Miss Rife, 20—23.

1 Thornton	South Simcoe	February 1
2 Stroud	South Simcoe	" 2
3 Moonstone, Temperance Hall	East Simcoe	" 3
4 Warminster	East Simcoe	" 5
5 Oro Station, School House	East Simcoe	" 6
6 Edgar, Temperance Hall	East Simcoe	" 7
7 Craighurst, Public Hall	East Simcoe	" 8
8 Newton Robinson	South Simcoe	" 9
9 Tottenham	South Simcoe	" 10
10 Elm Grove	South Simcoe	" 12
11 Everett, Orange Hall	West Simcoe	" 13
12 Creemore, May's Hall	West Simcoe	" 14
13 Duntroon, S.O.S. Hall	West Simcoe	" 15
14 Singhampton, Grant's Hall	West Simcoe	" 16
15 Nottawa, Orange Hall	West Simcoe	" 17
16 Collingwood, Court Room	West Simcoe	" 19
17 Grand Valley, E. Luther	East Wellington	" 20
18 Arthur, Village Hall	East Wellington	" 21
19 Damascus, W. Sutton	East Wellington	" 22
20 Mount Forest, Town Hall	East Wellington	" 23
21 Cedarville, S. Proton	East Wellington	" 24
22 Farewell, Arthur	East Wellington	" 26
23 Palmerston, Town Hall	West Wellington	" 27
24 Moorefield, Township Hall	West Wellington	" 28
25 Lebanon, School House	West Wellington (afternoon)	March 1
26 Alma, Town Hall	West Wellington	" 2

DIVISION 12.—(a) D. Anderson, 2—10; Thos. McMillan, 11—31; Henry Grose, 10—31; Miss Maddock, 2—9.

1 Horning's Mills, Workmen's Hall	Dufferin	January 2
2 Honeywood, Chosen Friends' Hall	Dufferin	" 3
3 Perm, Orange Hall	Dufferin	" 4
4 Relessey, Orange Hall	Dufferin	" 5
5 Camilla	Dufferin	" 6
6 Laurel, Township Hall	Dufferin	" 8
7 Jessopville, Church	Dufferin (afternoon)	" 9
8 Riverview, School House	Dufferin (evening)	" 9
9 Belfountain, Town Hall	Peel	" 10
10 Caledon, Township Hall	Peel	" 11
11 Mono Road, Society Hall	Peel	" 12
12 Bolton, Town Hall	Peel	" 13
13 Kleinburg, Temperance Hall	West York	" 15
14 Maple, Masonic Hall	West York	" 16
15 Elia, Foresters' Hall	West York	" 17
16 Islington, Township Hall	West York	" 18
17 Thornhill, Victoria Hall	East York	" 19
18 Laskev	North York	" 20
19 Box Grove, Foresters' Hall	East York	" 22
20 Victoria Square, Public Hall	East York	" 23
21 Sutton West	North York	" 24
22 Mt. Albert	North York	" 25
23 Aurora	North York	" 26
24 Kettleby	North York	" 27
25 Schomberg	North York	" 28
26 Vandorf	North York	" 30
27 Wexford	East York	" 31

DIVISION 12.—(b) Duncan Anderson

1 Fordwich, New Hall	East Huron	January 12
2 Bluevale, Foresters' Hall	East Huron	" 13
3 Jamestown, Victoria Hall	East Huron	" 15
4 Molesworth	East Huron	" 17
5 Ethel, Town Hall	East Huron	" 17

SUPPLEMENTARY MEETINGS.—*continued.*

6 Walton	East Huron	18
7 Haddock, School House	East Huron	19
8 Wenthrop	East Huron	20
9 St. Columban	East Huron	22

DIVISION 13. H. L. Beckett, 3—24; John Gardhouse, 3—11; D. Anderson, 24—31; J. G. Foster, 12—27; Mrs. Jean Joy, 29—31.

1 Altona, School House	North Ontario	January 3
2 Uxbridge, Town Hall	North Ontario	4
3 Zephyr, Public Hall	North Ontario	5
4 Udora, Orange Hall	North Ontario	6
5 Cannington, Walker's Hall	North Ontario	8
6 Beaverton, Alexandra Hall	North Ontario	9
7 Brechin, Public Hall	North Ontario	10
8 Udney, School House	North Ontario	11
9 Woodville, Village Hall	West Victoria	12
10 Little Britain, Temperance Hall	West Victoria	13
11 Valentia, Foresters' Hall	West Victoria	15
12 Reaboro, Orange Hall	West Victoria	16
13 Omeme, Opera House	East Victoria	17
14 Dunsford, Old Church	East Victoria	18
15 Cameron, Orange Hall	East Victoria	19
16 Kinmount	East Victoria	20
17 Manver's Station, Orange Hall	East Durham (afternoon)	22
18 Bethany, Town Hall	East Durham (evening)	22
19 Millbrook, Town Hall	East Durham (afternoon)	23
20 Cavanville, Old Church	East Durham (evening)	23
21 Garden Hill, Orange Hall	East Durham	24
22 Canton, S. E. Hall	East Durham	25
23 Newtonville, Sons Hall	West Durham (afternoon)	26
24 Newcastle, Town Hall	West Durham (evening)	26
25 Leskard, Town Hall	West Durham (afternoon)	27
26 Orono, Town Hall	West Durham (evening)	27
27 Hampton, Town Hall	West Durham (afternoon)	29
28 Tyrone, Sons Hall	West Durham (evening)	29
29 Solina, Sons of Temperance Hall	West Durham	30
30 Nestleton, Foresters' Hall	West Durham	31

DIVISION 14. W. S. Fraser, Jan. 3—26; W. C. Shearer; Jno. Gardhouse, Jan. 27—Feb. 2; Mrs. Jean Joy, 19, 20, 23.

1 4th Line, Orange Hall	West Peterboro	January 3
2 Ennismore, Town Hall	West Peterboro	4
3 Stewart's Hall	West Peterboro	5
4 Selwyn, Temperance Hall	West Peterboro	6
5 Douro, St. Patrick's Hall	East Peterboro	8
6 Westwood, Town Hall	East Peterboro	9
7 Havelock, Town Hall	East Peterboro	12
8 Norwood, Town Hall	East Peterboro	13
9 Consecon, Masonic Hall	Prince Edward (afternoon)	15
10 Wellington, Masonic Hall	Prince Edward (evening)	15
11 Demorestville, Town Hall	Prince Edward	16
12 Cressy, A.O.U.W. Hall	Prince Edward (afternoon)	17
13 Waupoos, Town Hall	Prince Edward (evening)	17
14 Milford, Town Hall	Prince Edward (afternoon)	18
15 Cherry Valley, Town Hall	Prince Edward (evening)	18
16 Wooler, Town Hall	East Northumberland	19
17 Brighton, Opera House	East Northumberland	20
18 Colborne, Temperance Hall	East Northumberland	22
19 Castleton, Town Hall	East Northumberland	23
20 Fenella, Hall	West Northumberland	24
21 Baltimore, Chapman's Hall	West Northumberland	25
22 Cold Springs, Township Hall	West Northumberland	26
23 Whitby, Council Chambers	South Ontario	27
24 Myrtle, Temperance Hall	South Ontario	29
25 Pickering, Fire Hall	South Ontario	30
26 Whitevale, Oddfellows' Hall	South Ontario	31
27 Columbus, Town Hall	South Ontario	February 1
28 Greenbank, Temperance Hall	South Ontario	2

SUPPLEMENTARY MEETINGS. — *Continued.*

DIVISION 15. J. W. Clark; J. N. Paget, 3—26; Wm. Eager, J. 27 to F. 8; Mrs. J. Joy, 11—16.

1 Adolphustown, Town Hall	Lennox	January	3
2 Sillsville, Town Hall	Lennox	"	4
3 Bath, Town Hall	Lennox	"	5
4 Odessa, Town Hall	Lennox	"	6
5 Switzerville, School House	Lennox	"	8
6 Centreville, Merrill's Hall	Addington	"	9
7 Tamworth, Town Hall	Addington	"	10
8 Queensboro, Orange Hall	North Hastings	"	11
9 Madoc, Town Hall	North Hastings	"	12
10 Hillbridge, Town Hall	North Hastings	"	13
11 Marmora, Town Hall	North Hastings	"	15
12 Springbrook, Foresters' Hall	North Hastings	"	16
13 Moira, Town Hall	North Hastings	"	17
14 Turner's School House	West Hastings	"	18
15 Harder's School House	West Hastings	"	19
16 Gilbert's School House	West Hastings	"	20
17 Foxboro, Old Church	East Hastings	"	22
18 Reed's School House	East Hastings	"	23
19 Melrose, Town Hall	East Hastings	"	24
20 Clazie's School House	East Hastings	"	25
21 Marysville, School House	East Hastings	"	26
22 Emerald, Cheese Factory	Amherst Island	"	27
23 Stella, Town Hall	Amherst Island	"	29
24 Barriefield, Township Hall	Frontenac	"	30
25 Wolfe Island, Township Hall	Frontenac	"	31
26 Westbrooke, Westbrooke Hall	Frontenac	February	1
27 Glenburnie, Orange Hall	Frontenac	"	2
27 Parham Station, Orange Hall	Frontenac	"	3
29 Mountain Grove, Town Hall	Centre Frontenac	"	5
31 Gananoque, Town Hall	South Leeds	"	6
31 Seeley's Bay, Select Knights' Hall	South Leeds	"	7
32 Elgin, Town Hall	South Leeds	"	8

DIVISION 16. Henry Glendinning; D. Drummond.

1 Escott, Township Hall	Brockville	January	3
2 Mallorytown, Township Hall	Brockville	"	4
3 Caintown, Presbyterian Church	Brockville	"	5
4 Addison, Ashwood Hall	Brockville	"	6
5 Algonquin	South Grenville	"	8
6 Maynard, Methodist Church	South Grenville	"	9
7 Roebuck, Orange Hall	South Grenville	"	10
8 Ventnor, School House	South Grenville	"	13
9 Shanley, Workmen's Hall	South Grenville	"	15
10 Mainsville, School House	South Grenville	"	16
11 Wallace's School House	Dundas	"	17
12 Iroquois, Town Hall	Dundas	"	18
13 Morrisburg	Dundas	"	19
14 Froathburn	Dundas	"	20
15 Aultsville, Fraternity Hall	Stormont	"	22
16 Osnabruck Centre, Township Hall	Stormont	"	23
17 Moulinette, Christ Church	Cornwall	"	24
18 Cornwall Centre, Township Hall	Cornwall	"	25
19 Northfield, Arbutnot's Hall	Cornwall	"	26
20 Newington, Workmen's Hall	Stormont	"	27
21 Berwick, Township Hall	Stormont	"	29
22 Monckland, McGillivray's Hall	Stormont	"	30
23 Warina, Township Hall	Stormont	"	31
24 Casselman, Town Hall	Russell	February	1
25 Eastman's Springs, Boyd's Hall	Russell	"	2
26 Leonard, Town Hall	Russell	"	3
27 Pendleton, School House	Prescott	"	5

SUPPLEMENTARY MEETINGS. — *Concluded.*

DIVISION 17. C. W. Nash; Geo. Carlaw.

1	Toledo, Town Hall	N. Leeds & N. Grenville	January	2
2	Easton's Corners, Methodist Church	N. Leeds & N. Grenville	"	3
3	Bishop's Mills, Temperance Hall	N. Leeds & N. Grenville	"	4
4	Heckston, School House	N. Leeds & N. Grenville	"	5
5	Burritt's Rapids, Victoria Hall	N. Leeds & N. Grenville	"	6
6	Merivale, School House	Carleton	"	8
7	Stittsville, Orange Hall	Carleton	"	9
8	Ashton, Temperance Hall	Carleton	"	13
9	Carp, Town Hall	Carleton	"	15
10	Glasgow	South Renfrew	"	16
11	Caldwell's	South Renfrew	"	17
12	Killaloe, School House	South Renfrew	"	18
13	Locksley, School House	North Renfrew	"	19
14	Micksburg, Orange Hall	North Renfrew	"	20
15	Lee's School House	Ncrth Renfrew	"	22
16	Almonte, Town Hall	North Lanark	"	23
17	Carleton Place, Town Hall	North Lanark	"	24
18	Lanark, Town Hall	North Lanark	"	25
19	Middleville, Town Hall	North Lanark	"	26
20	Balderson, McGregor's Hall	South Lanark	"	27
21	Drummond, Town Hall	South Lanark	"	29
22	Lombardy, Town Hall	South Lanark	"	30
23	Maberly, Town Hall	South Lanark	"	31



G. A. PUTNAM, B. S. A., SUPERINTENDENT OF ONTARIO FARMERS' INSTITUTES.

SPEAKERS AND SUBJECTS.



ANDERSON, DUNCAN C., Rugby.—Mr. Anderson was born in Scotland and came to this country at an early age. He settled on a bush farm in Simcoe County, cleared the timber with his own hands, and now has a splendid 200-acre farm, which he still works. He is a successful breeder of shorthorn cattle and bacon hogs. Not only has he been a successful Institute worker for this province, but he has been invited by the local governments of New Brunswick, Nova Scotia, Manitoba, British Columbia and the North-West Territories to visit their provinces, and has conducted Institute meetings in these places.

SUBJECTS: "Soil Cultivation," "Rotation of Crops," "Clover as a Fertilizer," "Manure; its Care and Application," "Beef Cattle; pure bred, grades and fat," "Horses; Draught, Agricultural and General Purpose,"

"Sheep; the Different Mutton Breeds," "Swine, especially the Bacon Type," "Conformation and Feeding of the Dairy Cow." Evening: "Farming as an Occupation," "Our Country."

ANNIS, L. E., Scarboro, has been president of the East York Farmers' Institute for some time, and in this capacity he and his secretary organized the Seed Fairs, which are now becoming general as an adjunct in Farmers' Institute work throughout Western Ontario. He is a good farmer, has a pleasing manner, is easy of speech, and makes a good impression on his audience. While Mr. Annis cannot attend regular meetings we are glad to have him on our reserve list this season.

SUBJECTS: "Production of Milk," "Pure and Impure Seeds, and Seeds of Weak Vitality," "Cultivation of the Soil," "Cern and the Silo," "Field Roots." Evening: "The Farmer's Honorable Calling," "Our Country."



BARBOUR, GAVIN, CROSSHILL. Mr. Barbour was born some 36 years ago on the farm at present owned by him. He has followed mixed farming, but has at the same time made a specialty of feeding cattle for export, turning all the raw products of the farm into the finished article. All this time he has received good returns for his grain and has maintained an excellent state of fertility on his farm. While Mr. Barbour has not had experience in Institute work, except during last season, he has information which will be useful to many farmers.

SUBJECTS: "Selection, Breeding and Feeding of Beef Cattle," "Cultivation of the Soil," "Care of Manure." Evening: "Farmers' Sons."



BECKETT, H. L., HAMILTON.—Mr. Beckett is the son of a prosperous farmer in the vicinity of Hamilton. He spent his early years on the farm, and subsequently took a full course at the Ontario Agricultural College, graduating in 1893. Mr. Beckett has successfully managed the homestead, devoting a good deal of attention to the dairy industry. He had charge of one of the travelling dairies which toured the province some years ago, and gave general satisfaction in conducting this educational campaign. He has already had extended experience in Institute work, and is quite at home in it.

SUBJECTS: "Farmyard Manure; its Management and Application," "Improving our Dairy Herds," "Feeding for Milk." **Evening:** "Farming as an Occupation."



CAMPBELL, JOHN, Woodville.—It is unnecessary to more than mention that the John Campbell referred to is the well-known sheep breeder who has been so successful at exhibitions not only in Canada, but, also, at the leading shows on the other side of the line. Mr. Campbell's specialty is sheep raising, and we also consider him one of the best authorities on general farming, and the growing of beef.

SUBJECTS: "Growing Lambs for Profit," "The Butcher's Bullock, from Breeding to Block," "The Bacon Hog," "How to Double the Production and Income on the Average Farm." **Evening:** "Life on the Farm as it was and as it is likely to be," "Farming as a Business."

CARLAW, GEORGE, Warkworth.—Mr. Carlaw is a good, practical farmer in Northumberland County. He attended the Ontario Agricultural College in his earlier years, and since then has been putting into practice on his farm the knowledge acquired in that institution. He is a practical dairyman, having served his time both in the home dairy and in the factory. Mr. Carlaw is also familiar with the practical work of the Farmers' Institute, having been secretary of his own for many years.

SUBJECTS: "Eradication of Weeds," "Profitable Dairying," "Grain Growing." **Evening:** "Education of Farmers," "The Farm Dairy."



CASTON, G. C., Craighurst.—Mr. Caston is past president of the Ontario Fruit Growers' Association, and has charge of the Fruit Experiment Station in Simcoe County. He is one of the oldest Institute workers, and is well and favorably known in this capacity throughout the province. In addition to the subject of fruit, Mr. Caston is prepared to discuss the subject of cold storage and transportation; also the marketing of farm products. He has probably done as much as any other man to introduce hardy fruits suitable to our northern districts.

SUBJECTS: "Succulent Foods and Fodder Crops," "Soil Problems and Nitrogen Traps," "The Export Bacon Trade," "Orchard Fruits of Ontario; their Care and Culture," "Some of our Troublesome Weeds," (Illustrated.) **Evening:** "Picking, Packing and Shipping Fruit," "The Fruit Garden," "The Land we Live In"

CLARK, J. W., Cainsville.—Mr. Clark is a large feeder of poultry for the British market. He does not approve of fancy breeds of chickens for style only, but has for years been a strong advocate of utility breeds. He fattens his chickens in crates, and has been particularly successful in his experiments in the selection of the best type of birds for fattening. Mr. Clark is also a breeder of pure bred hogs, and is prepared to discuss swine breeding from its many standpoints.

SUBJECTS: "Care and Selection of Seeds," "The Noxious Weeds on our Farms," "Growing and Curing Alfalfa," "The Bacon Hog," "Manure; its Care and Application," "Improvement of our Public Roads." Evening: "Poultry; the proper type of Fowl," (illustrated), "Poultry Buildings for the Farmer," "The Incubator; Eggs in Winter," "Care of the Honey Bee."



COTTRELLE, G. R., Milton.—Mr. Cottrelle has been interested in Institute work for many years, commencing first in his local Institute, and there making for himself a reputation as a speaker on poultry subjects. He fattens poultry for the Toronto and Montreal markets, and by selecting only the best type of birds for fattening he gets the highest market price. Mr. Cottrelle was appointed by the Dominion Department of Agriculture as one of its Live Stock Commissioners to the World's Fair at St. Louis.

SUBJECTS: "Poultry; Eggs in Winter," "Preparation for Market," "Poultry Houses," "Hatching and Raising Chickens Naturally and Artificially," "Care and Training of Light Horses." "Care of Sheep for Profit."

DRUMMOND, D., Ottawa, 59 Waverley St. — Mr. Drummond is a noted breeder of Ayrshire cattle, is a successful dairyman and a good farmer. He has, therefore, the requisities of a good speaker. He also speaks French fluently, and so has been useful in sections of the province where the inhabitants do not speak English well. He uses charts to illustrate his talks on the dairy cow. Mr. Drummond's services have been in demand in other provinces, and he has spoken at Institute meetings and judged cattle at fall fairs from the Atlantic to the Pacific.

SUBJECTS: "Selection and Breeding of Dairy Stock," "Soil Moisture and Cultivation," "Care and Application of Manure," "The Importance of Selected Seed to the Farmer."



DRURY, E. C., Crown Hill.—Mr. Drury is an honor graduate of the O.A.C. Like his father, the Hon. Charles Drury, he is a practical farmer, and works successfully a mixed farm of 150 acres. He is a fluent speaker and is well prepared to discuss subjects for which he is announced. We regret that we cannot secure Mr. Drury's services for the whole season.

SUBJECTS: "Cultivation and Soil Moisture," "Rotation of Crops," "Manures and Manuring," "High vs. Low Farming," "The Boy on the Farm." Evening: Any of the above with the exception of manures.

EAGER, WM., Morrisburg.—"The Duties of Patron, Proprietor, and Maker." "The Care of Milk on the Farm and in the Factory." "The Management and Care of Dairy Cattle." Evening: "The Advantages and Pleasures of Farm Life."

ELLIOTT, ANDREW, Galt.—Mr. Elliott was born near Galt. He has been a most successful breeder of dairy cattle and bacon hogs. Mr. Elliott is one of our oldest Institute workers, being enthusiastic, persevering, and extremely anxious for the success of every meeting he attends. His long experience as a successful farmer, and his ability to tell just what he has accomplished has made him a valuable worker.

SUBJECTS: "Moisture and Fertility in the Soil," "The Benefits of Clover," "Clover Hay," "Roots Necessary to the Successful Handling of Live Stock," "Corn and Silage," "The Profits of Sheep," "The Modern Hog," "Breeding, Feeding and Caring for the Dairy Cow," "Principles of Stock Breeding," "Pure Seeds," "Concrete." **Evening:** "Our Duty."



ELLIOTT, WM., Galt, is the son of Andrew Elliott, whose sketch appears above. He attended the O.A.C., Guelph, and since graduation has been putting into practice the knowledge there gained. He has followed in his father's steps as a breeder of dairy cattle and bacon hogs, and has been a conspicuous prize winner at our large provincial fairs. He is thoroughly practical and up-to-date in his methods of farming.

SUBJECTS: "Restoring and Maintaining Soil Fertility," "The Dairy Cow from Calf to Maturity," "The Growing and Feeding of the Bacon Hog," "Corn and the Silo." **Evening:** "How to Improve Present Farm Conditions."

FOSTER, J. G., Myrtle Station.

SUBJECTS: "Crop Rotation," "The Bacon Hog," "The Dairy Cow," "Our Fodder Crops." **Evening:** "The Land we Live In."

FRASER, W. S., Bradford.—Mr. Fraser is one of the pioneer Institute workers of Ontario. In the early days when Institute work was in its infancy he attended the meetings as the "practical" man, on a deputation composed largely of college professors. He is a thoroughly practical farmer, and has lived on the same farm for 50 years. He is well acquainted with most of the farm problems, and, having been over the entire province on Institute work, has become a valuable worker.

SUBJECTS: "Noxious Weeds and How to Deal with Them," "Seed Selection," "Clover and its Uses," "Sheep Management," "Bacon Hog," "Soil Cultivation; Underdraining," "Feeds and Feeding." **Evening:** "Home Life on the Farm," "Something Needful for Farmers."



GARDHOUSE, JOHN, Highfield, is a well-known breeder of shorthorn cattle, heavy horses and long wool sheep. All of the prize lists of our large fairs testify to his ability to raise high-class stock. He raises most of the food for his pure-bred stock, and is prepared to tell how he cultivates his land, plants his crops and mixes his foods so as to secure the best results from his live stock.

SUBJECTS: "Horse Breeding for Profit," "Care and Management of Horses," "How to Select and Feed Beef Cattle," "Care and Management of Sheep," "Raising Feed for Live Stock." **Evening:** "How to Improve Present Farm Conditions," "How to Interest the Young People in the Farm."

GIBSON, D. Z., Willow Grove.—Mr. Gibson graduated from the Ontario Agricultural College in 1892, and since that time has been most successful in operating a large farm in Haldimand County. He has had considerable experience in Institute work, but during the past few years has dropped from the list of speakers. After a good deal of persuasion he has been induced to allow his name to go on the reserve list, though he cannot attend a regular series of meetings. Mr. Gibson is a pleasing speaker, and a most valuable man to take part in discussions upon any line of general farming."

SUBJECTS: "Erudiment and Cultivation of the Soil," "Vegetable Mould in the Soil," "Lucerne Growing and its Benefits," "Do Sheep pay in Ontario?" "Fall Wheat Culture." Evening: "The Farmer as a Citizen," "Cultivation of the Mind," "Is Co-operation Beneficial to the Farmer?"

GLENDINNING, HENRY, Manilla.—Besides breeding and feeding dairy cattle, Mr. Glendinning has made a reputation as a producer of field seeds. For years he has studied the weed question carefully, and by practically eradicating all weed seeds from his fields has been able to produce a quantity of seed almost free from impurities. With his seed charts and talks on cultivation of the soil and rotation of crops, he has helped many farmers in Ontario to improve their method of farming, and to increase their profits.

SUBJECTS: "Feeds and Feeding," "Cultivation of the Soil and Rotation of Crops," "The Benefits of Clover," "The Growing of Red and Alsike Clover for Seed," "The Dairy Cow," "Breeding and Feeding of the Bacon Hog," "Weeds and How to Destroy Them," "The Farm Water Supply." Evening: "Beautifying the Farm Home."



GROH, ANSON, Preston.—"The Farmer's Wood Lot," "Breeding, Feeding and Management of a Dairy Herd," "A Dairy Farm and a Farm Dairy," "Bacon Hogs," "Systematic Rotation of Crops," "Soil Moisture; its Importance and Conservation," "Doubling the Revenue of the Farm in Five Years," "Clover and Lucerne." Evening: "The Stairway to Success," "The Farmer and the Sun," "Farming."



GROSE, HENRY, Lefroy.—Mr. Grose is the owner of a first-class farm in Simcoe County, and has been eminently successful in general farming. He has the happy faculty of presenting hard facts in a pleasing manner, and his address to boys on the farm is very instructive and uplifting. Mr. Grose attended a series of Institute meetings in Northern Ontario last season with great acceptance.

SUBJECTS: "How to Increase and Maintain the Fertility of the Soil," "Rotation of Crops," "Home Dairy Work," "The Growing of Clover." Evening: "Making Farm Life Attractive for the Boy."

HALLMAN, A. C., Breslau.—Mr. Hallman is of German extraction, and is located in a German settlement in the County of Waterloo. He is a well-known breeder and feeder of dairy cattle, and for years has been a prize winner for hogs at the Toronto Industrial Fair. He has also judged at many of our fairs, including Toronto Industrial, hence his talk on the improvement of live stock has been well received by many farmers.

SUBJECTS: "How to Improve our Live Stock; their Care and Feeding," "The Bacon Hog and Export Trade," "Cultivation of Corn and the Silo," "Growing Sugar Beets for the Factory," "Home Dairying," "Noxious Weeds." Evening: "The Farmer's Fruit Garden," "Agricultural Development," "Poultry on the Farm."





HILBORN, J. L., Leamington.—For a long time the name of Mr. Hilborn has been familiar as one of the leading fruit growers of Lambton County. He owns a splendid fruit farm on the north shore of Lake Erie, which bears every evidence of thrift and prosperity. His buildings are neatly painted, and no weeds are allowed to grow to the detriment of the crops. A 6,000 gallon tank holds water which is used for irrigating. While Mr. Hilborn cannot spare the time for regular work this season, we are glad to place his name on the reserve list.

SUBJECTS: "Planting and Care of an Apple Orchard," "Planting and Care of a Peach Orchard," "The Growing of Early Tomatoes and Melons for Market." Evening: "Improving Home Surroundings." "The Fruit and Vegetable Garden."

HUME, ALEX., Menie, is a noted Ayrshire breeder in the County of Northumberland. He is also a noted prize winner at our fall fairs, and as he is well prepared to discuss the dairy herd from all standpoints he will be appreciated in dairy sections.

SUBJECTS: "Selection and Care of the Dairy Herd," "Rotation of Crops and Application of Manure," "The Bacon Hog." Evening: "Advantages of Farm Life."

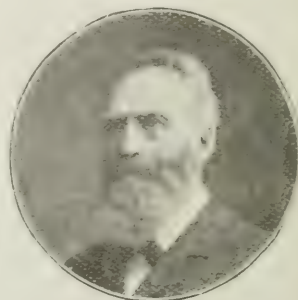


HUTTON, G. H., Easton's Corners.—Mr. Hutton is a graduate of the O.A.C., and, besides general farming, has made a specialty of raising hogs and chickens. He is thoroughly familiar with the use of the incubator and the rearing of fowl. Mr. Hutton belongs to the class of young men who believe in a liberal education for the farmer, and never loses an opportunity of advising farmers' boys to increase their theoretical and practical knowledge of farm work.

SUBJECTS: "Breeding and Feeding for Bacon," "Artificial Incubation, or Fitting Fowl for Fancy Prices," "Seeds and Seeding." Evening: "The Need of the Farmer of the Future."

JAMES, D., Langstaff.—Mr. James took possession of the farm on which he now resides some 33 years ago, and has succeeded in converting it from a bed of weeds and rubbish into a clean, systematic and well equipped farm. He is a believer in general farming, as will be seen from his list of subjects. Some 30 years ago Mr. James and his neighbors formed an association and held weekly meetings throughout the winter. At that time he began the collection of an agricultural library, and to-day has one of the best equipped agricultural libraries to be found among practical farmers.

SUBJECTS: "Destruction of Weeds," "Home Dairying," "Growing and Curing Alfalfa," "Corn for Ensilage," "The Bacon Hog," "Rotations and General Cultivation," "The Farmer's Wood Lot." Evening: "Elements of Successful Farming," "Some Mistakes made by Farmers," "Hits and Misses."





JONES, HAROLD, Maitland. For a long time it was thought that the St. Lawrence Valley would never become a fruit-growing district. Mr. Jones, however, has demonstrated to the contrary. He is one of the men who has made the apple known as the "McIntosh Red," famous throughout the world. On his farm is located one of the Provincial Fruit Experiment Stations, and through this Mr. Jones has for years demonstrated to the farmers throughout the Valley the benefits to be derived from clean cultivation, proper fertilization and persistent spraying. As the result of careful spraying Mr. Jones has raised large crops of fine potatoes, while those of his neighbors were ruined by rot. We regret that Mr. Jones can only allow his name to go on the reserve list this winter.

SUBJECTS: "How to Manage our Fruit Orchards: Planting, Cultivating, Fertilizing, Harvesting, Packing, etc." "Life History of some of our Troublesome Insects." "Spraying, and why we do it." "Potato Culture and Treatment for Blight and Rot." Evening: "The Balance of Nature. Bird Life and Insect World."

KYDD, W. F., Simcoe.—Mr. Kydd talks on horses, dairy cattle, and small fruits. He has had a large practical experience in all these departments, and, being an aggressive, forceful speaker, his words carry weight. He has also had a wide experience in fair matters, being the superintendent of the horse department of probably the largest agricultural show in the province. He is also a judge of light horses, and, as such, has been invited to place awards in many parts of Ontario. He is one of our most acceptable Institute speakers.

SUBJECTS: "Am I Raising the most Profitable Horse?" "The Dairy Cow; Her Summer Feed and Winter Care," "Small Fruits and Care of Grape Vines, Peach and Plum Trees," "Cultivation and Manures." Evening: "A Stitch in Time."



LEE, ERLAND, Stoncy Creek.—Mr. Lee has made his reputation as a practical dairy farmer. He is familiar with all kinds of farm work, as well as the manufacture of milk into butter. He practises soiling to a large extent with his cows, and has had good success in the feeding of cow peas green. He has been secretary of South Wentworth Farmers' Institute for many years.

SUBJECTS: "The Codling Moth and Apple Scab." "Conservation of Soil Moisture," "Breeding and Feeding of the Dairy Herd," "Care of Milk for the Factory and Creamery," "Home Dairying," "Treatment of Milk Fever," "The Silo." Evening: "Improvement by Selection."



LICK, ELMER, Oshawa.—Mr. Lick makes a specialty of fruit culture. He has had charge of a large orchard for a number of years, and when the Fruit Marks Act was passed by the Dominion Government he was one of the first inspectors to be appointed by the Dominion Department of Agriculture. In this capacity he has had an opportunity of looking into all matters connected with the fruit industry, from the cultivation of the soil to the disposing of the products. He, therefore, speaks with authority, and can view the question both from the producers' and commercial standpoint.

SUBJECTS: "Growing Apples," "Marketing Apples," "Cultivation of the Soil," "Cement Blocks in House Building," (illustrated), "Corn Growing," "Co-operation for Farmers," "The Farmer's Garden."



McCALLUM, J. M., Shakespeare.—“The Importance of Selecting good Seed Grain,” “The Spring Treatment of Seed Grain for Prevention of Smut,” “The Corn Crop,—Growing, Cultivating, Saving, etc.,” “Clovers,—their Place in Rotation, Cultivation, Saving etc.” “The Draught Horse on the Farm.” Evening: “The Problem of Keeping Ontario Boys and Girls on the Farm.”

McCRAE, LT.-COL., Guelph.—“Beef,” “Heavy Horses,” “Sheep Raising,” “General Cultivation,” “Rotation of Crops,” “Corn and the Silo,” “Field Roots,” “Forage Plants; with special reference to grasses and clovers.”



McMILLAN, THOS., Seaforth. — For many years Mr. McMillan has taken a deep interest in Institute work, having been president of his local Institute for some time. He is a practical farmer, and makes a specialty of beef cattle and heavy horses. Some years ago Mr. McMillan addressed Institute meetings in Ontario, and proved a most acceptable delegate, and we are glad to again place his name on our list of lecturers.

SUBJECTS: “Breeding and Feeding of Draught Horses,” “The Beefing Animal; how to Grow and Feed,” “Soil Cultivation and Crop Rotation.” Evening: “Encouragement of Canadian Agriculture,” “Life and its Duty.”

MACRAE, C. M., B.S.A., Ottawa.—Mr. MacRae spent his early life on the farm, and after several years' experience in teaching, took a full course at the O.A.C., graduating in 1904. Since graduation he has been employed by the Dominion Department of Agriculture in lecturing and judging in the various provinces. Mr. MacRae's practical knowledge, scientific training, and experience in lecturing and judging make him a valuable man for Institute work.

SUBJECTS: “Heavy Horse Breeding,” “Breeding for Beef Production,” “Requirements of the Bacon Trade,” “Food Stuffs and their Digestibility,” “Feeding Standards and how to Compute Them.” Evening: “Agricultural Education.”

MASON, T. H., Straffordville.—When the Ontario Agricultural College at Guelph first opened its doors to farmers' sons, Mr. Mason was one of the first to enroll. He spent two years at the institution at that time, and has been able, as a result of his college work, to put into practice on his own farm so many modern ideas and methods, that his neighbors have found his farm and farm work a constant inspiration to them. Mr. Mason makes a specialty of dairying and hog raising.

SUBJECTS: “Care and Food of Dairy Cattle,” “Hog Raising,” “Sheep Raising,” “Corn for Silage,” “Maintenance of Soil Fertility.” Evening: “A Trip to the Maritime Provinces,” “Changing Conditions of Ontario Agriculture.”



MILLER, ROBERT, Stouffville.—Mr. Miller is one of the best known live stock men in Ontario, being a noted importer and breeder of Shorthorns and Shropshires. While Mr. Miller has paid particular attention to this line of the live stock industry, he is also prepared to discuss the horse question. He has been in demand as a judge at many fall fairs, and is also a director of the Toronto Industrial Exhibition.

SUBJECTS: “Breeding and Feeding of Cattle,” “Sheep Raising,” “Horse Breeding.”



NASH, C. W., 94 Lee Ave., Toronto.—Mr. Nash has an international reputation on the subjects that embrace natural history. He has long been an authority on birds, and has written bulletins both for the Department of Agriculture and for the Department of Education on this important subject. His talks also deal with plant and insect life, as well as the rearing and breeding of domestic animals. Probably there is no one on the staff can better interest young people at Institute meetings than Mr. C. W. Nash.

SUBJECTS: "Chemistry of the Soil," "How Plants Grow," "Breeding of Domestic Animals," "The Value of our Birds," "Our Insect Pests," "Nature about the Farm," "The Enemies of the Pea Crop and How to Deal with Them."



ORR, J. E., Fruitland.—Mr. Orr lives on a 125-acre fruit farm, nearly every foot of which is devoted to fruit growing. Living, as he does, in one of the best sections of the Niagara District, and specializing as he does in the production of fruit, Mr. Orr has a technical knowledge of this subject possessed by few men of his age. From the cultivation of the soil to the marketing of the fruit he is familiar with every detail.

SUBJECTS: "Some Insect Enemies of the Orchardist," "Mistakes made in Spraying," "Notes on Plums," "Controlling the Codling Moth," "The Black Knot, and how we Exterminated it in our Township," "The Culture and Care of Fruit Trees," "Can we Overcome 'Off Years' in our Orchards?" "How and When to Prune."

PAGET, J. N., Canboro.—Mr. Paget is well known in dairy circles, through his connection with the Western Dairymen's Association. He has been either director or president for a number of years, and is now the honorary vice-president. Mr. Paget is particularly well known in his own district for the aggressive and up-to-date methods he has adopted in conducting his dairy business. He is not only a thoroughly practical man, but is capable of presenting the results of his experiments in a clear and forceful manner.

SUBJECTS: "Care and Production of Milk and Cream for Cheese Factory and Creamery," "Dairying for Profit vs. Loss," "Handling the Finished Product until it Reaches the Consumer." Evening: "Suggestions Relative to Solving the Problem of Retaining our Young Men and Women on the Farm."



PEARCE, JOHN S., London.—The name of John S. Pearce is well known throughout Ontario, particularly in the West, as the head of one of the most successful seed firms for many years. Some three or four years since Mr. Pearce gave up business to take charge of the parks and gardens and general horticultural work in London. He has had extended experience in Institute work, and his addresses on the selection of seed, planting of trees, etc., will be found very instructive.

SUBJECTS: "Selection, Care and Cultivation of Seeds," "School Houses and their Surroundings," "Planting of Trees for Ornament and Timber," "What, When and How to Plant," "The Farmer's Lawn and Flower Garden."

PEER, W. E. A., Burlington.—Mr. Peer is one of the best-informed young fruit men in the southern part of the province. He has had considerable experience in inspecting orchards, conducting spraying demonstrations, and superintending the fumigation of nursery stock. Mr. Peer has also lectured at Institutes with acceptance.

SUBJECTS: "Strawberry Culture," "Tomato Growing," "Plum Culture," "The Cherry," "A Young Man's Duty to Agriculture," "Ways and Means of Controlling Insect Life."



RACE, T. H., Mitchell.—Mr. Race is one of the best known and most acceptable Institute speakers in Ontario. He had his first experience in this work in company with Dr. Mills and the late John McMillan in the early history of the organization. Mr. Race spent his early life on the farm, but left it at the age of 26 to follow mercantile pursuits. After a business experience of six years he entered journalism, which he has followed successfully for a number of years. Mr. Race was appointed Canadian Commissioner at the World's Fair, St. Louis, and in Great Britain.

SUBJECTS: "Planting and Care of Commercial Orchards," "The Farmer's Fruit and Vegetable Garden," Also five-minute talks on the following subjects: "Pruning," "Grafting," "Roses," "Bedding Plants," "Care of Flowers," "Climbing Plants," "The Lawn," "Spraying," "Soil Formation and Fertility."

RAYNOR, T. G., B.S.A., Ottawa.—There will be few, indeed, of our readers who do not know Mr. Raynor. He has been in nearly every Institute district in Ontario, as well as in some States of the Union. He is a good speaker, and is thoroughly familiar with his subjects. He is a graduate of the O.A.C., has been president of the Agricultural Experimental Union, was president of the old Central Farmers' Institute, and has been identified with nearly every progressive agricultural movement in Ontario during the past twenty years.

SUBJECTS: "Feeds and Feeding," (illustrated), "Forestry," "Grading up a Herd or Flock," "Corn and Clover," "Soil Cultivation," "The Production of Pork," "Noxious Weeds and Methods of Destroying Them," "A Forward Movement in Field Agriculture," "How to Increase our Dairy Profits," "The Farmer and the New Seed Control Act." Evening: "Agricultural Development," "Mistakes in Farming."



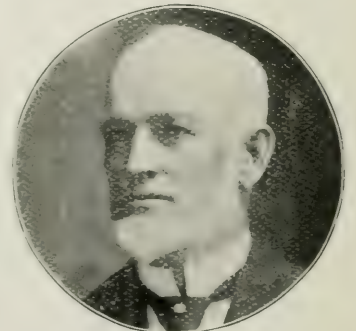
REED, DR. HENRY G., Georgetown.—Having had a good, practical farm training, and a thorough course in veterinary science, Dr. Reed is able to deal not only with the problem of breeding and feeding live stock, but can also discuss the question of "Domestic Animals in Health and Disease." Dr. Reed has been much in demand to judge live stock at all fairs, and his Institute work has been entirely satisfactory and much appreciated.

SUBJECTS: "The Influence of Natural Laws in the Breeding of Live Stock," "Breeding Horses to Meet the Present Market," "Diseases of the Digestive System of Cattle," "Diseases likely to occur in Newly-calved Cows and Preventive Treatment," "Care of the Brood Mare and her Foal," "Care and Feeding of Horses with a View to Preventing Disease." Evening: "A Talk to Farmers' Sons," "Development and Training of Young Horses."



RENNIE, SIMPSON, 454½ Ontario Street, Toronto.—The name of Rennie needs no introduction to the farmers of Ontario. Mr. Simpson Rennie was connected with the agricultural club formed in Scarboro Township 35 years ago, and attributes much of his success to the knowledge gained from the papers and discussions given at the club long before the establishment of Farmers' Institutes. Mr. Rennie is one of the best authorities we have on all lines of general farming. His farm won the gold medal in the "Good Farms Competition" in Ontario in 1883.

SUBJECTS: "Is the Sugar Beet a Profitable Crop for the Farmer to Grow?" "Root Culture and Rotation," "Destruction of Weeds," "Selecting Cattle for Beef Production."



REYNOLDS, A. J., Scarboro Junction.—Mr. Reynolds is secretary of East York Institute. Besides the regular Institute meetings he and his fellow workers have held a series of special meetings conducted entirely by local talent, and without any help from the Department. Out of these meetings has grown their annual Seed Fair, of which Mr. Reynolds is also secretary. Unfortunately Mr. Reynolds cannot conveniently leave home for a long trip, but we are glad to place his name on our reserve list.

SUBJECTS: "The Dairy Cow; her Care and Feed," "Corn and the Silo," "Clover Growing," "Objects and Methods of Cultivation," "Seed Fairs," "Sugar Beets."



SHEARER, W. C., Bright.—Dairying is the particular department of farming in which Mr. Shearer has been eminently successful. He is thoroughly practical, a good speaker, an Institute man of experience for some years past, and is a most acceptable delegate. As will be seen from his subjects, Mr. Shearer is also prepared to discuss the bacon, seed and corn questions.

SUBJECTS: "Rotation of Crops and Selection of Seed Grain," "Corn in Drills or Hills for the Silo?" "The Cultivation of Mangels, Potatoes and Turnips," "The Bacon Hog and His Feeding," "Selecting a Dairy Herd." Evening: "Pure-bred Poultry for Boys and Girls," "Making a Success on the Farm."



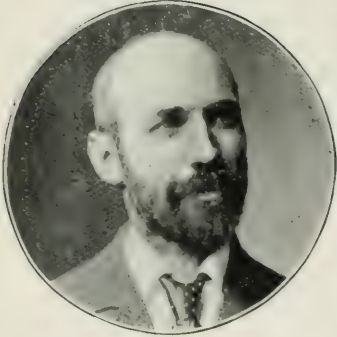
SHEPPARD, FRED. A., Queenston.—Mr. Sheppard is a successful fruit farmer in the celebrated Queenston district. He has made a specialty of packing fruit in fancy boxes for the best trade. He has also been particularly successful in grafting and budding, and gives illustrations of both these methods of propagation at the meetings. He is also a producer of tomatoes, and talks tomato culture from the cold frame to the market.

SUBJECTS: "Propagation of Fruit Trees, Vines, Care of Orchards and Vineyards," "Clover, Corn and Roots," "The Importance of Soil Moisture and How to Conserve It," "Small Fruit for the Home Market," "Insects, Fungi Injurious to our Fruit Crop," "Weeds, and how to Destroy Them," "Some Advantages of Living on a Farm."

SHEPPARD, MAJOR JAMES, Queenston.—As the title would imply Major Sheppard has had a military record. As a defender of the country in 1866, he has a fund of historical knowledge that different Institutes have found useful for their evening meetings. His talk on "Three Historical Days on the Niagara River" has been as favorably commented on as any that have been delivered. His practical subjects deal with orchard management and good roads. With the latter movement he has been identified for many years. In 1902 he had charge of the Good Roads Movement in Eastern Ontario, and built roads in several townships as a guide to the municipal council for future work in road making.

SUBJECTS: "Planting and Care of Fruit Trees," "Propagating Fruit, Grafting, Budding, etc.," "The Spray Pump, when and how to use it," "Macadam Roads, Cost of Construction," "The Improvement of Country Roads," "Soil Tillage for Fertility and Moisture," Evening: "Opportunities on Canadian Farms," "Three Historic Days on the Niagara River."





SHERRINGTON, A. E., Walkerton.—Mr. Sherrington has had charge of the Provincial Fruit Experiment Station for that district. He is well up in matters pertaining to fruit culture, and is known in the Lake Huron district as a "co-operative farmer," for he believes that "in union is strength." He is the manager of his local co-operative society, and handles most of the fruit shipped out of the town of Walkerton.

SUBJECTS: "Orchard Management," "Planting, Pruning and Grafting," "Spraying as a Preventive of Insects and Fungous Diseases," "Co-operative Marketing of Farm Products," "Conservation of Soil Moisture," "Selection of Seed Grain and the Eradication of Weeds," "The Importance of Uniformity, Quantity and Quality in Farm Products," (afternoon or evening). **Evening:** "The Farmer's Fruit Garden," "Breeding, Feeding and Marketing of Poultry," "Beautifying the Farm Home."

SMITH, ALEX. W., Maple Lodge.—Mr. Smith is past president of the Shorthorn Breeders' Association of Ontario, and of the Provincial Winter Fair. He is one of the best known stock men in Ontario, and we have no better authority on the production of sheep and beef cattle. Mr. Smith conducts his large farm in a thoroughly up-to-date manner, and is prepared to discuss general farming from the standpoint of his own experience. We regret that he finds it impossible to attend a full series of meetings.

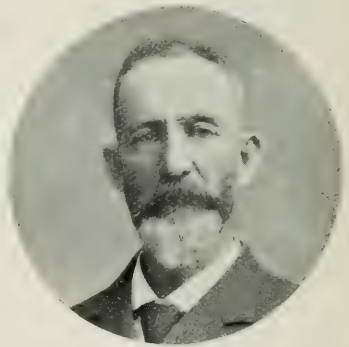
SUBJECTS: "Selection and Feeding of Beef Cattle," "The Production of Mutton and Wool," "The Advantages of living on the Farm."

STANDISH, DR. J., Walkerton.—After a thorough training in practical work upon his father's farm in the County of Wellington Dr. Standish took a course in veterinary science, and followed that profession for some 25 years. He has done considerable Institute work in Ontario and the other provinces of the Dominion during the past three or four years. He has been a prominent judge of live stock at fall fairs for 30 years. Dr. Standish is an authority on the subject of horses, beef cattle and bacon hogs. He is also prepared to discuss general farm management.

SUBJECTS: "Breeding of Horses," "Selection and Feeding of Beef Cattle," "Requirements of the Bacon Hog Industry," "Diseases of the Digestive System of Cattle," "Unsoundness in Horses and the Best Means of Detecting Same." **Evening:** "Training of the Young Horse."

STEPHEN, W. F., Huntingdon, Que.

SUBJECTS: "Soil and Tillage," "Corn and the Silo," "The Dairy Cow; How to Rear and Feed Her," "Good Roads and How to Make Them," "Keeping Farm Accounts and Records," "Stable Manure and Fertilizers." **Evening:** "How to Interest the Boys and Girls in Farming," "Making the Most of Farm Life."



STEVENSON, R. S., Ancaster, is one of the oldest Institute workers in Ontario. Being a practical dairyman and breeder of dairy cattle, he has been identified with advanced dairy work in Ontario for a long time. During the past few years he has acted as judge of live stock at many fall fairs, and has given excellent satisfaction. No matter where he goes Mr. Stevenson is always welcome, and is recognized as a man who thoroughly understands the work he undertakes to discuss.

SUBJECTS: "A Practical Talk on Dairy Cows, Breeding, Feeding, Selecting, etc.," "Growing the Corn Crop and Handling it to the Best Advantage," "The Growing of Root Crops," "The Cream Separator on the Farm," "The Farm Water Supply."

THOMPSON, ROBERT, St. Catharines.—Mr. Thompson is a practical fruit grower, and has also had a wide experience in the handling and shipping of fruit. He is also interested in the subject of cold storage, and has practically demonstrated the need for such an institution in a large fruit business. Mr. Thompson is also a practical farmer, and, in addition to his orchard work, raises large quantities of poultry and hogs.

SUBJECTS: "Poultry Raising," "Incubators and Poultry Houses," "Swine Breeding and Feeding," "Corn Growing," "Small Fruit and Fruit Trees," "Gathering and Marketing of Fruit," "Cold Storage," "Under-draining," "Cultivation of the Soil," "Good Seed, and Some of our Common Weeds, and How to Destroy Them." **Evening:** "The Farmer of the Future and his Prospects," "Poultry Raising for Boys and Girls," "Hints on Canning Fruits and Vegetables."



WAGG, A. J., B.S.A., Mindemoya.—Mr. Wagg is a graduate of the O.A.C., and a specialist in dairying. After graduation he moved to New Ontario, and has been doing pioneer work in dairying for some years past. He has had charge of a large creamery in Mindemoya, on Manitoulin Island, and it was because of his success in this work that he was chosen to the larger field of Institute work.

SUBJECTS: "Selection and Management of Dairy Cattle, Calf, Heifer, Cow," "Soil Fertility in Relation to Dairy Farming," "Milk; Secretion, Composition, Management and Food Value." **Evening:** "Methods of Creaming Milk and Home Butter Making," "Agriculture Education," "Conditions in New Ontario for the New Settler."

WARREN, J. L., Acton.—Mr. Warren has had experience as secretary of Halton Institute, and it was due largely to his aggressive work that it became the banner Institute for Ontario two years ago. He is a thorough, practical farmer, and his addresses are interesting and instructive. Institute officers will find Mr. Warren competent to give them valuable information as to conducting local Institute work.

SUBJECTS: "Clover as a Feed and Fertilizer," "Corn and the Silo," "Breeding and Feeding of Beef Cattle," "Talk on Weed Seeds." **Evening:** "How to Make our Institute Successful," "The Institute as an Education for Farmers' Sons and Daughters."

YULL, ALEX., Carleton Place.—"Breeding, Care and Management of a Dairy Herd," "Corn and the Silo," "How to Restore an Impoverished Farm," "Care of Farm Horses." **Evening:** "How Shall we Utilize our Winter Evenings?" "Farming as an Occupation."



SPECIAL DAIRY SPEAKERS.

ECHLIN, J. H., Carleton Place.—"The Farmer's Necessary Equipment for the Production of first Quality of Milk," "Care of Milk for Cheese Factories," "Some of the Defects of the Cheese Industry as seen by an Instructor," "Duties of Patrons and Manufacturers."

MITCHELL, J. W., Superintendent Eastern Dairy School, Kingston. "The Cream Gathering Creamery," "Care of Milk for Cheese Factories, and Creameries," "The Present Requirements of the Cheese Industry."

PUBLOW, G. G., Chief Dairy Instructor for Eastern Ontario, Kingston. "The Care and Production of Milk for Cheese Factories," "The Importance of Properly built well equipped and Sanitary Factories," "Skill and Forethought Essential in the Manufacture of Cheese," "The Cheese Industries of the Dominion."

WILSON, D. M., Kemptville.

SUBJECTS: "Common Taints Found in Milk, and their Action in Cheese and Butter Making," "The Patron's Relation to the Factory," "Unnecessary Loss in Cheese-making," "Points to be looked for in a Dairy Cow," "Silos and Silage," "Co-operation in Dairying."

WOODARD, A. W., Montreal.

SUBJECTS: "Cheese-making: Duties of Producers, Makers and Proprietors," "Dairying: Mistakes of the Past Season and Suggestions for the Coming One," "Butter-making: Manufacturing and Marketing."

ZUFELT, L. A., Chesterville.—"Production and Care of Milk," "The Duty of the Patron to the Manufacturer," "The Present Requirements of the Cheese Industry." Five minute talks on the following subjects: "Milk," "Cheese," "Skim Milk," "Whey," "Milk Cans," "Handling Facilities," "Cleanliness," "The Maker."

LADY SPEAKERS.



BACKUS, MRS. A. H., M.D., Aylmer.—The Women's Institutes of Ontario are to be congratulated on securing the services of Dr. Annie A. Backus as one of its lecturers. Having been brought up on a farm, she is familiar with rural conditions, and knows the secrets of success. She is a keen observer, and a most acceptable speaker wherever she goes. Last summer Dr. Backus addressed Institute meetings with great acceptance in the southern part of the province.

SUBJECTS: "Women's Institutes; Objects and Benefits," "Hygiene in the Home and Aids in Nursing," "The Importance and Meaning of Women's Work," "Religious, Patriotic and Moral Teaching in the Home," "The Education of Girls," "Women who have Assisted in the Making of Canadian History."

BELL, MISS MARY, St. George.—North Brant Women's Institute is fortunate in having amongst its members such a capable and willing worker as Miss Mary Bell. She has shown a great interest in the work for her local Institute, and it was through her cooking demonstrations at local Institute meetings that Miss Bell's ability was brought to the attention of the Department. She is a graduate of Oread College, having taken a thorough and practical course in domestic science. During May and June of last year Miss Bell proved a most acceptable delegate at summer meetings of Women's Institutes in the eastern part of the province.

SUBJECTS: "Soups," "Eggs; Methods of Preparation," "Salads," "Cool Dishes for Summer Use," "Ventilation and Sanitation," "Refining Home Influences."



CAMPBELL, MRS. COLIN, Goderich.—Mrs. Campbell is secretary of the West Huron Women's Institute, and under her guidance it has become one of the strongest Institutes in the province. She has also been an acceptable speaker at Farmers' Institute meetings, and a glance at her list of subjects will show that she is prepared to speak on many helpful phases of women's work.

SUBJECTS: "The Kitchen Garden; Does it Pay?" "The Housekeeper and Her Importance to the State," "Practical Housekeeping," "Domestic Science," "Food Principles, Food Products, and their Dietetic Value,"



CARTER, MISS GERTRUDE, Guelph.—Miss Carter is a graduate of the Guelph Dairy School, and since her graduation has spent two years in her father's creamery at Aberfoyle. She is, therefore, prepared to speak on all questions pertaining to the handling of milk and the manufacture of butter. She is also a public speaker of ability. Besides the subject of dairying, Miss Carter is prepared to discuss the sewing question, which is one of great importance.

SUBJECTS: "The Art of Sewing in the Home," "Care of Milk and Cream," "The Sunny Side of Dairying," "Pleasures and Profits of a Dairy School Training," "Courtesy in the Home," "The Modern Woman on the Farm."



DUNBRACK, MRS. A. E., St. John, N.B.—Many officers and members of Women's Institutes prefer to have as a delegate a woman of practical experience in house-keeping, rather than a young girl, no matter how thorough a college course the latter may have had. Mrs. Dunbrack has the advantage of college work, as well as ten years' experience in housekeeping. She is, therefore, prepared to speak from actual knowledge on the subjects for which she is advertised. During the summer meetings of Women's Institutes, Mrs. Dunbrack proved an interesting and helpful delegate.

SUBJECTS: "Hints on the Hygiene of Infants and Young Children," "Systematic Housewifery," "Annual House-cleaning," "The Table," "Poultry Raising."



DUNCAN, MISS BERTHA, Emery.—Miss Duncan is a graduate of the Hamilton School of Domestic Science, and has attended a number of Women's Institute meetings. She was brought up on a farm, and is familiar with conditions of rural life, as well as being a practical housekeeper.

SUBJECTS: "Economy in Small Things," (with demonstrations), "Use of Food to the Body," "Selection and Care of Vegetables," "Eggs," "Salads," "Selection and Preparation of Food."



GRAY, MISS GERTRUDE, 650 Bathurst Street, Toronto.—Two summers ago, during the special series of Women's Institute meetings, Miss Gertrude Gray took her first trip on Institute work, and was well received in the different districts visited. She took a course in domestic science in Toronto, and at her own home puts into practice the knowledge gained while taking her college course.

SUBJECTS: Cooking demonstrations; the following: "Meats and Fish," "Salads," "Puddings," "Eggs and Egg Dishes," "Cream Soups," "Tea Dishes."

Talks on the following subjects: "Domestic Science and Women's Institutes," "Suggestions for Home Makers," "Food We are What we Eat."



GRAY, MISS LILIAN D., 650 Bathurst Street, Toronto.—Miss Gray is a graduate of the School of Domestic Science at Toronto. Besides her regular talks on the home and home-making, she is prepared to give practical demonstrations on the preparation of foods for the table. She also advocates a liberal diet of fruit, and her talk on "The Value of Fruit in our Diet" has been well received in the Institutes she has visited.

SUBJECTS: "The Value of Fruits in our Diet," "Domestic Science on the Farm," "Nutritive Value of Foods in Health and Disease," "Making Home Attractive."



JOY, MRS. JEAN, 317 Brunswick Avenue, Toronto.—Several years previous to the introduction of Domestic Science in the schools of Toronto. Mrs. Joy addressed gatherings of ladies in various parts of the Province upon the subject, and it was through her instrumentality that a petition was presented to the Board of the Technical School of Toronto, requesting that Domestic Science be placed upon the regular course of studies. The petition presented was one of the most representative that had ever come before the Board, and they decided to include Domestic Science in the curriculum. The classes from the first were well attended, and were most successful under the guidance of Mrs. Joy. She has ever since been in close touch with work of this nature, and the Department has been most fortunate in securing her to address Women's Institutes throughout Ontario.

SUBJECTS: "Food and Its Relation to the Body," "Digestion; Food in Health and Disease," "Infant and Child Feeding," "Water, Milk,—Beverages," "Meats," "Vegetables," "Ventilation and Sanitation," "Balanced Rations for Man," "Physical Education of Children."

KINNEY, MRS. ANDREW, Grandview.—Mrs. Kinney is one of the most successful butter makers in Brant County. For a number of years she commanded the highest price for dairy butter on the Brantford market, and it was from the reputation made in this way that she became known to the Superintendent of Farmers' Institutes, and was induced to take a position on our staff. She also makes a specialty of plain sewing, and her talks on "Fabrics" will, no doubt, be helpful and interesting to many women. Mrs. Kinney carries with her samples of flour, and tells how to judge it.

SUBJECTS: "Home-made Bread and the Flour we Use," "One Week With the Farmer's Wife Making Butter," "The Women's Institute as a School of Domestic Science," "The Fabrics we Buy and How to Make Them Up," "Evenings at the Homestead," "The Modern Home."



McTAVISH, MRS. D., North Bruce.—Mrs. McTavish might be called one of the pioneers of West Bruce. As soon as Women's Institutes were mentioned she was one of the first to see the possibilities of such an organization for women on the farm. Since then she has been indefatigable in her efforts on behalf of the farmers' wives and daughters of her own district. She has also found time to help in provincial work, and none of our speakers have been more acceptable to the Women's Institutes of Ontario than Mrs. McTavish.

SUBJECTS: "Bread Making," "Home Dairying," "The Benefits of Women's Institutes," "Kindness and Economy in the Home," "Home Economics," "The Education of our Daughters."



MACMURCHY, DR. HELEN, 133 East Bloor St., Toronto.

SUBJECTS: "Twentieth Century Health Problems," "Health and the House," "The Health of Women and Girls," "Accidents and Emergencies," "Disease Germs," "Tuberculosis," "Patent Medicines," "The Day's Work."

MADDOCK, MISS BLANCHE, Guelph.—Miss Maddock started in Farmers' Institute work before Women's Institutes were organized, so that she is thoroughly familiar with all branches of the work. Being a graduate of the Guelph Dairy School, and a student of bacteriology, she has a fund of useful information, and is always welcomed by her audiences. She has probably organized more Women's Institutes in Ontario than any other one person, and has shown herself an expert in getting into the hearts of the people, and getting them to work. Wherever Miss Maddock has gone there have been requests that she should return to the same district.

SUBJECTS: "Science of Butter Making," "Bread Making," "Our Women's Institutes and How to Make Them Interesting," "Bacteria; Their Relation to Health and Disease," "A Girl's Possibilities."



MILLAR, MISS BELLA, Guelph.—Miss Millar was for two years instructor in the Home Dairy Department of the Strathroy Dairy School. There she had an opportunity of helping the farmers' daughters to become familiar with the proper care and handling of milk and its manufacture into butter. During the last three years Miss Millar has turned her attention to Institute work, and having had a training in hospital nursing as well as in dairying, she is well up on two subjects which are always interesting to an Institute audience.

SUBJECTS: "Butter Making," "The Farm End of the Dairy Business," "Hints for the Home Nurse," "Women's Institutes," "Domestic Education."

RIFE, MISS ISOBEL, Hespeler.—"Two years ago Miss Rife proved one of the most acceptable delegates to Women's Institutes, although it was her first experience in work of this kind. Previous to going out Miss Rife took a course in the Macdonald Institute at Guelph, and before that was a successful public school teacher. As well as being a capable and pleasing speaker, Miss Rife created a most favorable impression in many places by her gift of song.

SUBJECTS: "Benefits and Pleasures of a Macdonald Institute Training," "Mutual Helpfulness in Women's Institutes," "Sunshine, Pure Air and the Bath as Aids to Health," "Prevention and Home Treatment of Consumption," "Hygienic Influence of Laughter and Song," "The Value of Physical Development."



ROSE, MISS LAURA, Guelph.—Miss Rose is well and favorably known to most agricultural audiences in the Province of Ontario. She has charge of the Home Dairy Department at Guelph College, and has in the Guelph Dairy instructed thousands of farmers' daughters in the art of butter-making. In the November-December series each year Miss Rose lends her services to Institute work, and occasionally during the winter, as she can be excused from her college work. For the past three years Miss Rose has taken charge of the Travelling Dairy in Nova Scotia, with marked success.

SUBJECTS: "Defects we Find in Butter; their Cause and Remedy," "How to Make the Dairy Cow Bring in Larger Profits," "A Plea for Purer Milk," "Bread and Buns," "As Others See Us," "One Eye in the Field; the Other in the Town," "The Head, the Hand, the Heart; the Tripod of Successful Work," "Observations of Child Life."



SHUTTLEWORTH, Miss L., Guelph.—Miss Shuttleworth was born and brought up on a farm, and is familiar with the conditions surrounding Ontario farm life. Since graduation from Guelph Dairy School several years ago, she has had extended experience in dairying and other lines which fit her particularly well to address Farmers' and Women's Institute meetings. Miss Shuttleworth has proved an acceptable delegate to Women's Institute meetings the last two seasons.

SUBJECTS: "Dairy Work on the Farm," "The Care of Milk for Factories and Creameries," "Cold Dishes for Summer Use," "Fruits; Methods of Canning, Preserving, etc.," "Evenings at the Homestead."



SMITH, Miss AGNES, Hamilton.—Miss Smith is a graduate of the Ontario Normal School of Domestic Science, Hamilton. She has been connected with Women's Institute work almost since its organization, and her practical demonstrations have helped thousands of women in Ontario on their farms. For the past two years she has taken charge of the demonstration work at the College at the time of the Farmers' Institute excursions to Guelph. She is also a graduate of the Dairy School at Guelph.

SUBJECTS: "Principles of Cooking," (with demonstrations), "Meats; Composition and Cooking," "Food in its Relation to the Body," "Domestic Science," "The Sanitary Home," "The Needs of the Home of the Present Day," "Labor Problems of the Household," "The House: its Furnishing and Decoration."

EXTRACTS FROM RULES AND REGULATIONS.

Below are given a few extracts from the Rules and Regulations Governing Farmers' Institutes. Only those portions which are of special interest to officers and delegates have been selected. A complete edition of "Act, Rules and Regulations Relating to Farmers' Institutes of Ontario" may be had upon application to the Superintendent, Parliament Buildings, Toronto.

OBJECT OF LOCAL INSTITUTES.

The object of each local institute shall be the dissemination of agricultural knowledge in its District and the development of local talent. The officers shall endeavor to bring the rank and file of the farmers into touch with the most successful local men, that the masses may become more conversant with the best and most profitable methods of farming, stock raising, dairying, fruit culture, and all branches of business connected with the industry of agriculture.

SELECTION OF OFFICERS.

One of the most important duties devolving upon the members of the institute is the selection of officers at the annual meeting, to be held between the 1st and 20th of June in each year. In order that the best interests of the organization may be served, it is well to elect for each township representative men who will take an active interest in the work. It would be well for the officers and directors to give the matter due consideration: look carefully over the field, and select the best men representing the various districts.

Each year a meeting of the directors shall be called by the secretary to meet some time before the 1st of March. The special business of this meeting shall be to arrange for holding the annual meeting.

Each municipality in the district shall be divided annually between the directors representing the same, whose duty it shall be to make a thorough canvass for membership each year. This division of territory shall be arranged at a directors' meeting held immediately after the close of the annual meeting.

As soon as it is decided to hold an institute meeting in a municipality, the directors elected to represent that municipality shall form part of the executive committee, until after the close of said meeting. The duties of the said directors shall be to assist (to the best of their ability) the other members of the executive, to the end that a successful meeting may be held in their municipality.

It shall be the duty of the officers and directors to be present at the meetings of the institute. An officer or director who has not during the current year attended the meeting held in his municipality (except when prevented by sickness, or otherwise rendered valuable assistance to the institute, shall not be eligible for re-election to office for the ensuing year.

Every officer and director shall promptly answer all official communications addressed to him by the Superintendent, and should make diligent efforts to furnish any information required of him relative to the affairs of the institute.

SPECIAL INSTRUCTIONS AND EXPLANATIONS.

The Farmers' Institute system is non-political in the strictest sense. (See Clauses 31 and 32 of the Act and Rules governing Farmers' Institutes). Persons sent as delegates, and officers and directors of institutes, are instructed to enforce these rules to the very letter. Delegates are expected not to discuss, either directly or indirectly, political or sectarian questions while engaged as delegates, either before, after, or during the meetings. It is not necessary for them when acting as delegates even to make public their political allegiance.

The greatest care is exercised in choosing speakers. The services of specialists are obtained as far as possible—persons who have been successful in special lines, or those who are well qualified to explain profitable methods not generally followed. No attention is paid to politics, religion, or nationality when choosing delegates; they are chosen because of their qualifications only.

In some cases the delegates may not be prepared to discuss the subjects the local officers deem of greatest interest. In such cases the officers should employ additional persons to deliver addresses of the character desired. A list of these additional speakers, together with subjects, may be secured by applying to the Superintendent.

If, from sickness or any other cause, a delegate who is advertised cannot fulfil his engagements, another person competent to discuss similar subjects will be sent in his place. But every precaution will be taken to prevent the necessity of changes. When changes are necessary substitutes will be chosen from among the list of available delegates.

The Department defrays the cost of sending regular delegates to regular meetings; but officers, directors, and members of institutes are expected to lighten, as far as possible, the expenses of the delegates by meeting them at the railway station and conveying them free of expense, to the places of meeting, or returning them again to the station or forwarding to the next place of meeting.

Delegates and officers are urged to do all they can, by the use of the *Question Drawer* and otherwise, to draw out in discussion as many as possible of those present. Call upon them personally and urge them to speak. Frequently those best qualified are least inclined to take part. Try in each case to make the discussion interesting by engaging some experienced man to follow each address and thus open the discussion. Do not allow one or two to monopolize the discussion, but make all feel that they have a part in the proceedings.

FARMERS' INSTITUTE CONVENTION.

It will be remembered that a year ago last spring there was an expressed desire on the part of a number of Farmers' Institute workers that representatives from the various Institutes be called together to devise ways and means whereby the work of the Institutes might be made more efficient. The first convention was held at the time of the Canadian National Exhibition, Toronto, on the 6th and 7th of September, 1904. There was a large representation at this meeting and the delegates took an enthusiastic and keen interest in the addresses and discussions, and the then Minister of Agriculture expressed the opinion that it would be wise to have an annual gathering of Institute officers and lecturers for the purpose of reviewing the work and planning for the subsequent campaign.

A similar gathering was called for the second week of the exhibition this year, and a brief report of the proceedings is given herewith,—

SECOND ANNUAL CONVENTION OF FARMERS' INSTITUTE OFFICERS AND WORKERS.

The opening session of the Farmers' Institute Convention, held at 2 p.m. on Wednesday, September 6th, was attended by a large number of Institute workers from all sections of the Province, and a large percentage of the lecturers employed from year to year. The Honorable Nelson Monteith, Minister of Agriculture, presided at this session and expressed his delight at meeting with such a large gathering of representative men, men who are guiding the agricultural destinies of the Province. He spoke in most flattering terms of the good work accomplished through the Institutes, and stated that the success attained was due largely to the energy and enthusiasm shown by the local officers and directors. "One of the greatest needs", said Mr. Monteith, "is that steps be taken for greater co-operation among the farmers". After referring to the wonderful progress made by Danish farmers through adopting sound methods of co-operation, Mr. Monteith advised that this subject receive the careful attention of the Ontario farmer.

"We hear that there is a tendency to stagnation in some of the Institutes. Such instances, however, are quite rare, and we advise the local officers to look into the cause. I am sure that you will find lack of co-operation and sympathy among the farmers, one of the chief causes for this failure to appreciate the efforts of the Department. The local officers should make an effort to impress the people generally, with the fact that the Institutes are theirs, and that they should take advantage of the opportunities afforded for mutual benefit."

The Honorable Minister closed by inviting those in attendance to enter heartily into the discussions, and receive all the ideas and information possible to carry back with them to their respective ridings.

ADDRESS BY SUPERINTENDENT PUTNAM.

Mr. Putnam expressed his pleasure at meeting with such a noble body of representative workers from over the whole Province, men who are making it possible for the Department to carry on an educational campaign for the betterment of the agricultural classes. He then congratulated the delegates upon having a Minister of Agriculture who was most anxious to do all in his power to further their interests. The Minister was always willing to discuss the minutest details with reference to this work and was ready with suggestions and recommendations for improvement. "Even when the Department is willing to do its duty and the Minister of Agriculture is ever ready to further the interests of the agriculturists, yet the success of the Institutes depends for the most part upon the enthusiasm and earnestness with which the

officers,—Local Managers, enter into the work. We must look to the men in each riding, especially the secretary, to plan the work for his riding and to carry out the wishes of the Department so far as advertising, furnishing of halls, etc., are concerned.

It is true that complaints occasionally reach the Department regarding the unsuitability of speakers sent. With the system now followed it is rather difficult to so place speakers and arrange dates that the subjects taken up by them will be suited to all the places visited. Even in a series of meetings extending over say four weeks, we find that a deputation visits two or three localities in which the wants of the people are quite different. One week may be spent where the feeding of cattle for beef purposes is the chief industry, while in another section dairying may be the back-bone of the riding, while in yet another the fruit industry may have pre-eminence. It is the aim of the Department to overcome these difficulties by rearranging the meetings and, if necessary, spending something additional in travelling expenses.

We sometimes hear it stated that the Institutes are on the wane; that there is not the interest taken in the work that there was a few years ago. This is true in part, and yet it is somewhat of an exaggeration. A number of the speakers who attended meetings last winter, when the weather and roads were anything but favorable to a large attendance, reported that while the numbers at the meetings were somewhat smaller than usual, the interest taken in the discussion of local problems was keener than in any previous year. This is one very encouraging feature of the work. Unless we can induce the farmers and farmers' sons to come together and discuss local conditions and exchange experiences we cannot hope to get the greatest good from the meetings.

In spite of the unfavorable weather and the necessity of holding most of the meetings in the month of February, the membership was about the same and the attendance only from five to six per cent. less than in the previous year. In looking over the records for the various ridings, we find that in some the attendance and membership during the past year is considerably larger than ever before, while in other ridings there is a marked falling off, which is rather difficult to account for, even though the weather was unfavorable. We are confident of one thing, however, and that is, that the system upon which the Institutes is run in this Ontario of ours, compares favorably with that followed in the States of the Union and the other Provinces. The average cost of giving instruction along agricultural lines to every small town, and we might say village, in the Province, is much less per individual reached than that of any State in the Union, or Province of the Dominion. We are firmly convinced of the workability of the system, and that with a few slight changes the results in years to come will be even more marked than in the past. It is the province of the Institute, as you know, to carry methods of agricultural practice to the farmers, their sons, and daughters, who cannot take advantage of the various courses given in our Agricultural College and Dairy Schools. It is only a small percentage that will receive direct benefit from the courses given, so we must prepare ourselves to instruct the large majority by some other means.

It is a surprise to me that the Institutes have met with such favor and have resulted in such good to the agriculturists generally, when for the most part only one meeting is held in each centre during the year. We find that there is a good deal of interest and enthusiasm just before and at the time of the meeting but there is nothing to maintain this interest throughout the year. I would strongly recommend that the farmers form themselves into local clubs for the discussion of such subjects as are of special interest at various seasons of the year. The Department is quite willing to give any assistance within their power towards furthering this work. Lesson sheets can be prepared, dealing, for instance with such matters as are of interest to the farmers at any particular season of the year, and these lessons could be taken up by the farmers without any speakers being sent to them. They could arrange

that different members of the club deal with the sub-headings which are given on the lesson sheet. There is not a farmer who cannot derive benefit from the experiences of his neighbor farmers, and there is not a farmer who is not able in return to give suggestions which will be useful to his neighbor farmers. This being the fact, there is no doubt but that the greatest good would result from having discussions periodically among the farmers in each locality, these discussions being supplemented by information along the lines of the lesson in leaflet form.

It is the aim of the Department to make the meetings from time to time more and more of an object lesson, and as far as possible to illustrate the addresses. To do this we are arranging this year for a number of judging classes, at which animals of the different kinds of live stock are to be on hand and used by the lecturers in demonstrating the desirable and undesirable conformations. It is the intention also to pay a good deal of attention to instructing farmers how they can best increase the yields of the various crops by an intelligent selection of seed. An effort will be made to acquaint the farmers with the character of the more noxious weeds, especially those which are mentioned in the new Seed Control Act, and which are likely to prove a source of loss to the farmers. We are arranging to furnish each deputation with a set of thirty weeds, found in the Province. These will be nicely pressed and mounted and in nearly every case the root, seed, stem and leaves will be shown. Arrangements will also be made to furnish charts for the uses of the various speakers in illustrating and enlarging upon their talks.

One of the crying needs in Ontario is that some means be adopted by which the producers of milk and cream for cheese and butter purposes, be encouraged to take better care of this product and deliver it to the manufacturers in the best possible condition. Until this problem is solved we cannot hope for much better methods in our dairying, and the watchword should be *improvement*, if we hope to hold the place we now have in the markets of the world. Foreign countries are becoming stronger and stronger in competition and it becomes Canada and especially Ontario to look after her laurels at this time."

DISTRICT REPORTS.

GOOD ATTENDANCE IN HALTON.

"The meetings in Halton," said Mr. Little, "have been well attended, considering the weather, especially the supplementary meetings. The membership is hardly up to previous years, but interest in the work has never been better." Mr. Little stated that in his opinion the meetings were held in the wrong time of the year to assure a good attendance. He thought if they could be arranged when the weather was more favorable better attendance would be secured, and more interest aroused in the work. "Many societies make a mistake in changing their officers too often. As long as a man is doing good work he should be re-elected. The work of the officers is very important, and when a good man is in office it is not wise to risk a change."

JUDGING CLASSES IN BRANT.

"Three years ago we had a membership of 90," said T. P. Taylor, of Burford, section of South Brant Farmers' Institute. "At the annual meeting we appointed 40 directors. These directors held a meeting and had a dinner at the expense of the Institute. They then went to work and the membership was increased to 250, and the next year it was raised to 400. This year it is down to 250, and we are practically at a standstill." Mr. Taylor seemed quite favorably disposed toward a large number of directors. "We have had enough lectures," said Mr. Taylor, "what we want to do now is get down to practical work. In Brant we have been giving a prize of \$30 for stock judging competitions. We have been holding stock-judging classes for gen-

eral educational purposes, and for preparation for these competitions. These classes have been highly successful, and we consider them one of the best features of our work. Last year we tried the two-day meetings. One was a failure but the one held at Burford was a decided success, in fact, the best meeting we ever had. A feature of it was a demonstration in judging beef cattle."

SEED DISCUSSION OF SPECIAL INTEREST IN ELGIN.

Mr. McCaul of West Elgin stated that in his district the meetings during the last two years have not been as well attended as previously, but he attributed it to the unfavorable weather and the fact that arrangements had been such that meetings in the two districts clashed. However, although the attendance had decreased, the interest was as live as ever. The discussions have been extra good, and this is a reliable indication of the interest taken. One of the chief topics of discussion among the members in Elgin has been seeds: the production of improved seed and control of weeds.

INSTITUTE WORK A SUCCESS IN NORTH HASTINGS.

"There is no reason why our Institute affairs should be discouraged," said Mr. Foster of North Hastings. "On the other hand, I believe the Institute work of the last year has, considering everything, been the greatest success in its history." Mr. Foster thought a reduction of only five per cent. in the membership was a splendid record, considering the weather which has prevailed. He also expressed the opinion that the judging classes were one of the best features of Institute work, and should be encouraged.

GOOD OFFICERS THE SECRET OF SUCCESS.

Mr. Pratt, of Centre Simcoe, said: "In Institute work, as in anything else, we find two classes, the interested worker and the indifferent man. Success of the Institute depends almost entirely upon the officers; if you have good energetic officers you will have a good Institute, and if you have a careless directorate you will have a poor Institute. Hence the importance of electing none but the best men to office. If your officers are not what they should be, put them out. Institutes are not organized for friendship purposes, but for business, and to be successful we must put them in charge of men possessing business ability."

FAVORS HAVING ALL MEETINGS AT ONCE.

Mr. Longmoor of West Kent stated that in his district the meetings have been fairly successful, although the membership has been slightly reduced. The Institute is in charge of good officers, and interest in the work is keeping up well. Mr. Longmoor thinks it would be an advantage to have all the meetings in a district at one time, as nearly as possible, rather than spreading them out.

SHOULD BE MORE ENERGETIC IN SECURING MEMBERS.

Mr. McMillan of East Huron says the only reason membership has been reduced is because they have not been persistent enough in canvassing for members. "If we would increase our membership we must get after the men and persuade them that they have twenty-five cents which belongs to the Institute. Members can be got, but it requires work to do it." Mr. McMillan considers one of the weaknesses of the Institute at present is that the young men are not sufficiently interested. He says: "It is the young men who will have this work to look after in the future, and we should train them now, so that they will be able to express themselves when called upon."

FRENCH SPEAKERS NEEDED.

One of the difficulties in Prescott is that there are two classes of people. Mr. Macdonald states that in order to hold meetings in the French districts it would be

necessary to have French speakers furnished. Mr. McKillican, Prescott, considers the great problem to be, how to get the men out to the meetings who are in most need of them. It is always the best farmers who attend the Institute meetings, and in order that the most good may be done it is necessary to get the poorer class of men to attend. Mr. Christy of Dundas stated that their Institute had suffered very little by reduced membership.

Mr. Birdsall of Peterboro says the Institute in his district is not improving much. Mr. Birdsall likes the idea of holding stock judging classes, but foresees great difficulty in getting the people and stock together. He also considers the collection of weeds by school children a good help to the work.

HOLDING MEETINGS IN SUMMER.

This year the East Manitoulin Institute has been holding meetings during the summer instead of in winter. Mr. Wagg stated that although the attendance was somewhat lower, greater interest was taken in the meetings, and they will likely be continued in the summer. In this Institute an attempt is being made to form clubs for the purpose of visiting the best stock. The members could visit herds much more readily in small clubs than in large bodies. In this district prize essays on agricultural topics are popular.

SHOULD RECOGNIZE THE MERITS OF OUR OWN COUNTRY.

The membership of the South Waterloo Institute has been reduced from 720 to 664, but this is accounted for by reasons mentioned, and interest in the work is keen, particularly in the judging classes. Mr. Slater said: "We only have one delegate from the department, and one is all we need. We want our own young men to take the meetings and tell what they are doing on their own farms. It is the experiences of the farmers we want, and we should develop our young men not only to be good farmers, but to tell other people about their work. And we should hold our heads high, and be proud of our country. To-day we hear a great deal about the North-West, but when it comes to producing wealth per acre we can beat them to a standstill. Let our young men see the advantage of our own Province instead of letting the western people do all the talking, and they will be more content to stay here and develop their native Province." Mr. F. W. Hodson's address.

VALUE OF INSTITUTES.

By F. W. HODSON, LIVE STOCK COMMISSIONER, OTTAWA.

(On the morning of Thursday Mr. F. W. Hodson, who was the first Superintendent of Farmers' Institutes for Ontario, gave a very practical and instructive address. He stated that the rules and regulations governing Ontario Institutes were applied in other Provinces, and were found to work satisfactorily.)

Farmers' Institute meetings are valuable from the fact that they bring farmers from various parts of a district together and allow them to compare notes. Frequently we find a man who is not a success, we will say in growing roots. Such a person may attend a Farmers' Institute meeting where root growing is discussed. He may there learn the experience of say five successful root growers whose practices extend over a period of ten years, thus the unsuccessful man has the advantage of fifty years' experience in root growing. Lecturers and farmers relating their experiences should detail their mistakes as well as their successes.

At Institute meetings during the last ten years large numbers of farmers have learned to express themselves well. Before the Institutes were established, in the Province of Ontario it was a rare thing to find a farmer capable of expressing himself freely and forcefully at a public meeting. Now we have numbers who are capabl

of doing this. The power of speaking publicly is a valuable asset to any class of men. There are many other organizations attended by farmers but none of a distinctly educational character. It should be the aim of the Superintendent of Institutes, the lecturers and the officers to maintain and intensify this feature of the Institutes. This should be the chief, and in many cases, the only object of an Institute organization. In order to aid the educational work each Institute whose funds will allow, should subscribe for one or more agricultural papers for each of their members. It is **supposed** by many that only the persons who attend the Institutes are benefited. This, however, is not the case. A farmer who attends Institute meetings and weighs well the advice given by the lecturers and adopts such of it as meets his requirements will grow better crops and better stock than the man who does not attend. Because he farms better he will be more successful and his methods will attract the attention of the less successful man and those who do not attend the meetings, and they will copy from him and thus the influence of the Institute is spread among a large number.

The success of a local Institute depends largely on the secretary. The secretary is or should be the chief officer and the managing director of the Institute. If he understands his work and is diligent and earnest the Institute will flourish no matter where situated.

The next most important adjunct is the selection of the speakers. An Institute with a good secretary and carefully chosen speakers will be successful and the meetings will be largely attended. The local Institutes are responsible for the speakers: **each local Institute** is requested to report, on forms furnished for the purpose, particulars concerning each speaker. If these forms are properly filled in and forwarded to the Provincial Superintendent of Institutes this officer learns exactly how each speaker has done his work. In this way he can weed out undesirable men and retain the services of those that are suitable. The essentials of a successful Farmers' Institute speaker are, that he has been successful in the line that he attempts to teach: he should be a fluent speaker, but some of the best men now engaged by the Dominion Department were very indifferent speakers when they began, but they were good farmers and knew their particular lines well. First they commenced by reading a paper and answering questions, then they began to speak off hand. As well as being a successful farmer the lecturer must be a student, he must keep up with the times and must always be a little in advance of his audience; he must not be a politician and must not be chosen because of his political affiliations, but because he is a man of **honesty** and integrity, and has suitable attainments as a farmer. Each speaker should thoroughly acquaint himself with the work done along his particular line by the Dominion and Provincial Experiment Stations and the officers of the Departments of Agriculture. On no account should he contradict or minimize well-established and accepted work done by these institutions and officers: such a course leads to confusion and damage. He should carefully study the work of the officers and institutions above referred to and assist in every way he can to make known the results of well-established investigation and research.

The local institutes should specialize. The officers should determine the class of stock, grain, and fruit best suited to their districts and choose men who are capable of teaching along these lines. For instance, in a dairy district, dairymen should be employed, not only this but dairymen who can teach the peculiar branch of dairying best suited to the district. If heavy horse breeding is a leading industry then a man capable of teaching this branch should be chosen. It is much better to breed one class of horses, cattle, sheep and swine, in a district than to have a dozen different **sorts**. The live stock of Great Britain has become famous because this course is practised. In Herefordshire you will find little else but Herefords; in Shropshire only Shropshires, in the dairy districts of Scotland, Ayrshires, and so throughout Great Britain. This plan has many advantages.

In order to obtain the services of local men it is an excellent plan to give prizes for essays: these essays to be read at a certain hour during the meeting and thoroughly discussed. Plenty of time should be given for discussion after the reading of essays or after a speech is delivered. Essays should not occupy more than from twenty minutes to half an hour to read and lecturers should not occupy more than thirty minutes in delivering their addresses, though answering questions may frequently occupy as long a time.

There is a demand in many institute districts for something new. This is a mistake. We should first find what our respective districts are best suited to produce. In order to determine this we must study our environments and our markets. When we have studied these we must bend all our energies to know all there is to know about the business. Study, research and experience will give us additional information each year which can be discussed with advantage. Institutes conducted in this way may be called "experience meetings" and will bring out a great deal of useful information.

Generally speaking the winter months are the best time to hold institute meetings but summer meetings may be held; fruit meetings in orchards where practical demonstrations in spraying, etc., may be given; short courses in stock judging may be held at stock farms. Examination of growing crops and lectures on cultivation of soil have met with first-rate success in some of the Provinces. An interest frequently neglected by institute officers is the county paper. Institute officers and speakers should pay a great deal of attention to the county and agricultural papers. The editor should be induced to attend the meeting and the speakers should have prepared a short synopsis of his paper that can be handed to the editor to which additional notes may be added. Reports of meetings should also be sent to the weekly papers not represented. This will generally ensure publication but we cannot expect the editors of the county papers to attend institute meetings and give reports unless they are treated with more or less liberality. These gentlemen make their living by the publication of a paper including the advertising; this is their means of support. Therefore we should not expect the editor to give us free space any more than he should expect a farmer to give him free wheat, potatoes, meat, apples, and milk.

In every case the exact programme of the meeting should be published on the posters, the time at which each address or paper will be delivered or read and the name and address of the speaker. This programme should be strictly adhered to.

DISCUSSION OF SPECIAL TOPICS.

METHODS OF ADVERTISING.

In the discussion on the best methods of advertising meetings it was suggested that a synopsis of addresses be furnished to the head of each deputation and be given by him to reporters at the meetings and mailed to other papers in the vicinity of the meeting place. Some of the delegates drew attention to the fact that more should be done by way of advertising the meetings previous to the time of holding the same. It was also thought well that in these advertisements, the time to be devoted to each subject and the title of the subject be mentioned definitely. There was an expression of regret on the part of some, that either on account of lack of interest or because of the busy season of the year, it was difficult to get many to attend the annual meeting.

TWO MEETINGS AT DIFFERENT POINTS ON THE SAME DAY NOT ADVISABLE.

In reply to a question by the Superintendent as to the advisability of holding meetings at two places on one day, Mr. Andrew Elliott, of Galt., stated that in his opinion it was better to cut such meetings out. "I cannot understand," said Mr. Elliott, "why it is that farmers will go miles and miles to an auction sale, but we cannot get them to attend an Institute." .

"Is it necessary that we have an Institute at all? We will admit that it *was* necessary, but to-day I find comparatively intelligent men who will tell me that it has outlived its usefulness, and that we must bring forth something new. I maintain that the Institute is more necessary to-day than it ever was, from the fact that every other country has some system of institutes by which farmers are being taught as to the manner in which they can produce more cheaply. If this Province of Ontario is not alive to the situation, it will have to take a back seat. I hope that that day will never come. I believe that this Ontario of ours is able to hold its own in any company, and there is no spot on the North American Continent where high class stock raising can be carried on to better advantage. There is no country that I have ever seen that has the same system of maintaining the fertility of the soil, and in which we find such high class farming and so many happy homes.

We hear that the people are not coming out to the Institute gatherings. Perhaps they are not. I believe that some officers are discouraged. If I can get one dozen men at a Farmers' Institute meeting, who have come for a certain purpose, and if we can give them some new ideas to elaborate, they will take these home and work them out on their farms. We cannot tell the extent of the benefit derived therefrom.

I believe that to a certain extent the delegates are responsible for the success of the meetings. If we had a splendid meeting last year then to-day we will have a good meeting. If the delegates do not grasp the situation then you will build the foundation of a meeting that will fall down next year. Our Institute men must be better and better. A delegate must be prepared to make himself one of the people,—to mingle with them and make himself perfectly at home.

It is better to take the work to the farmers—to the corners; it is the little meetings that are going to do good and that will solve the problems of the soil. The delegates should always uphold the dignity of their calling.

We want a general purpose man for an Institute man. There are certain fundamental truths that every delegate must be able to bring forward. We ought to know more about the soil which we tread under our feet. The greatest curse of our country is the system of impoverishing the soil as followed in some sections."

COMMENCE MEETINGS ON TIME.

Mr. John Campbell, of Woodville, considered the failure to commence meetings at the time advertised, one reason for failure to attain best results. If the meeting it announced for two o'clock then it should commence at that time. "There is not a spot in the world that has made the progress that Ontario has." We are not only producers but manufacturers, and are changing our raw materials into a form which brings higher value.

TWO-DAY MEETINGS.

In the discussion on the advisability of holding two-day meetings the delegates were of opinion that these meetings should be held only at those places where some special work, such as judging of stock, examination of weeds and weed seeds, or seed fairs were introduced. The opinion was expressed that in the natural growth of the work, provision should be made for classes at various centres, extending from one to three weeks time.

TIME OF ANNUAL MEETINGS.

In the discussion as to the best time to hold the annual meetings of the Institute, it was learned that some of the Institutes attributed the lack of interest in the work to the fact that the annual meetings were held at a time when it was difficult for the farmers to attend. The majority of delegates were of opinion that, though there were certain disadvantages in having the annual meeting in the month of June, it was

on the whole the most suitable season of the year. It would never do to have the Institute year end in the midst of the campaign, which begins in the latter part of November and continues until the first of March. One of the delegates reported that by far their best annual meetings have been held since the time had been set for the month of June. It is well, however, for the officers to arrange for some special feature in connection with the annual meeting.

It was decided after a great deal of discussion that it would be wise not to make any change in the date of the annual meeting and the time for closing the Institute year.

FARMERS' CLUBS OR LOCAL CLASSES.

One of the most interesting topics discussed at the Convention was that of the advisability of establishing classes or clubs at several points in each riding for the purpose of holding meetings at different seasons of the year, the same to be conducted by local speakers. The Superintendent stated that the Department would be willing to furnish lesson sheets to be used at these periodical meetings. Mr. J. McEwen, who was a member of a local Farmers' club, before Institutes were established, stated that the club to which he belonged formed itself into a Farmers' Institute. Mr. McEwen said in part: "The great difficulty in establishing classes, arises from the fact that laborers are so very hard to secure, especially on the farm and consequently the farmers are so busy that they are unable to give attention to meetings of this kind. The great inducements there are for young men to go to the North-West, and the many attractions there are for them in the cities, result in the work of the farm being left to a few and these few find it exceedingly difficult to do their work and attend so many meetings as it appears to be necessary to attend in our own interests. But if there is good work done in the way of preparing programmes and if the introduction of these subjects is placed in the hands of good efficient men, I see no reason why meetings of this kind should not give good results. We find a good deal of difficulty at all times in interesting our farmers in turning out and looking after their own business. All other classes of producers in this country seem to turn out more readily and take action far more quickly than agriculturists. We have been working along lines of education for a good many years, particularly during the Institute years, and we have every reason to feel proud of the work we have done and I believe that we have it firmly established in our own minds that the work will continue. We have been making two blades of grass grow where only one grew before, and if we can only continue the good work and double that again it will be a great advantage to the country. We must aim to educate, not only the old, but the young as well. We lose a great many of our young men from this Ontario of ours. We should make an effort to establish some of these classes during the coming summer and see how they work, and if they work successfully continue them."

Mr. A. Forster, of Markham, in referring to the East York Club, which was formed some thirty-five years ago, stated that it was called the Markham Farmers' Club and that they held annual meetings with an attendance of from 150 to 200 and a membership of from 75 to 80 and one very prominent feature was that in the summer time they had monthly meetings held on the farms of the neighborhood. We had excellent opportunities for demonstrations. We usually went over the whole place and viewed the crops. I think this feature made every member more particular, for if he came to the Farmers' Club and preached methods which he did not practice, then the other members found it out. These local clubs could act as feeders to the Farmers' Institute meetings.

Mr. Simpson Rennie, of Toronto, stated that he belonged to the Farmers' Club of Markham, and continued, "I know that I derived great benefit from attending that Farmers' Club in my early days. I may say that I was always one of those who were anxious to learn. The custom of holding the meetings on different farms was

an excellent idea. We inspected the crops and methods of cultivation, which was very important. A great part of my success is due to the benefit received at these meetings. At every meeting some person was elected to give an address at the next meeting, which would be held about a month later. The addresses had the effect of arousing the interest of the people and when the speaker had finished, the discussions were usually very brisk. I am satisfied that the Farmers' Club referred to, did a great deal of good; more than anything else that I know of. I have noticed, however, that at those clubs as well as at the Farmers' Institute meetings the older heads attend, as there is not enough time in their estimation to allow their sons to attend also. It should be impressed upon the people, the fathers especially, that they should give their sons an opportunity to learn. The young men feel diffident in getting up to speak and cannot express themselves as readily or correctly as they would like.

The young men in our section realizing this lack in their education, organized a society and held regular meetings during the winter months and it has been of the greatest value to these young men, making them good platform speakers and Institute men in every sense of the term, and if the proposed plan of forming local clubs be carried out, I think that it will be of great benefit indeed."

A delegate from West Kent, gave the history of a local club formed in that county years ago and spoke very highly of the benefits derived therefrom.

Mr. Thos. McMillan, of Seaforth, stated that the local men who assist at Institute meetings in his riding received their training at Literary Societies and Farmers' Clubs. "Before our Institute was established we kept a Farmers' Club in existence for ten or twelve years and in that locality we now have five or six men who can address an Institute meeting acceptably. I think it would be advisable for the Secretary of each Institute to be empowered to spend part of the funds in encouraging these local meetings."

Mr. W. F. Kydd, Simcoe: "I was at a Farmers' Institute meeting last winter where they organized a club and I attributed the success of that meeting to the one bright and shining light. He gave a first-class address and advised the farmers to form a club, and before the close of the meeting six men were nominated as a committee to proceed with the formation of the club. They announced the subject for the first meeting to be held one month later, and I have no doubt of the success of the local organization in that place."

It was the consensus of the meeting that at least a few local clubs be established and if the results were satisfactory that they be established generally in the Province.

DEMONSTRATIONS.

Mr. T. G. Raynor, of the Seed Division, Ottawa, stated that at the meetings attended by him in the northern part of the Province during the past summer, he used live stock to illustrate his talks. "This object lesson work has been a success, and I believe that a number of two-day meetings should be held in order that more demonstration work could be undertaken."

Mr. Raynor also spoke very favorably of the use of charts, and Mr. Andrew Elliott, of Galt, considered that more benefit could be derived from an illustrated ten minutes talk, than from a half hours talk without illustration material.

Mr. G. R. COTTRELL, Milton, said: "I have been attending these meetings with a great deal of interest, and I believe we, from the county of Halton, can speak from experience. A good deal has been said about the young man leaving the farm. It has been our experience that of all the different kinds of meetings held by our Institute, the stock judging class will bring more young men than any other kind of meeting. In our county, the subject of light horses has always a great interest, and brings out a large attendance. It was our object this past year, to co-operate as much

as possible with the different fairs in the county. There are four township fairs in our riding, and it is our object to have each secretary made a director of the Institute, in order that when we wish to hold a stock judging class in any centre, we have the president and secretary of the agricultural society to help us. It entails a great deal of work in order to make a success of the judging class. It takes nearly two weeks of my time to make complete and satisfactory arrangements for a successful judging class at Milton. The great secret is in the selection of suitable stock. It requires care in order not to offend the owner of the stock, and at the same time to draw attention to the defects in the different animals.

We have tried the Seed Fair with a great deal of success, and we find that the quality of the seed as now shown at our seed fairs, is much better than that at the first seed fair we held. We give a small grant to each local fair for a judging class, handled by the Institute. The animals are brought out, and young men under twenty-five are asked to compete, not only in placing the animals, but in giving the reasons for the awards."

MR. JOHN GARDHOUSE, Highfield: "Although we had only about two days' notice at our judging classes, there were fifty in attendance. We used shorthorn cattle and horses. We first went over the stallions and then the mares, and the class was asked to place the mares in order of merit. Then the individual was asked to place the animals. We usually picked out a young man who had already given his decision. We then asked how many in the class agreed as to the decision as given by the individual, and then for those who did not agree. In some cases three or four animals were placed first by different members of the class. We had six or seven animals in each class. I am certain that much good was done, and many went away well satisfied, and I believe and trust that every man there received some good and some education to take away with him. If classes similar to that could be held, I am sure that much benefit could be derived.

"It was noticeable that a number of old men were in attendance. I think I never attended an Institute where persons expressed greater pleasure at the work undertaken."

MR. GEO. FARMER, Sault Ste. Marie: "At our class we used score cards and gave prizes to the man who came nearest to judging the animals correctly. There was a great deal of interest shown, and I am sure that the meetings were most profitable."

NOXIOUS WEEDS.

In the course of a discussion on the spread of noxious weeds, Mr. Thomas McMillan stated that "the law respecting noxious weeds is defective, that is, unless the inspector enforces the law. The municipal council, may, upon the petition of fifty rate payers, appoint an inspector. Would it not be well to have the municipality forced to appoint an inspector? I know of only one inspector, and he is doing good work. There is a fine of \$10.00 for an inspector who fails to perform his duty."

The Honorable Mr. Monteith expressed the opinion that something further by way of co-operation or legislation should be done to prevent the introduction and to destroy the weeds, but stated that he thought that it would be unwise to force a municipality to appoint an inspector. This is not what the people want.

MR. T. G. RAYNOR: "We are now distributing the new "Seed Control Act," and we feel certain that its operation will do much to lessen the introduction and spread of noxious weeds. Copies will be mailed to all applicants.

HON. NELSON MONTEITH, Minister of Agriculture, referred to the fact that the Danes received 10 millions of dollars for eggs, bacon and poultry, because of superiority in quality and system and uniformity in preparation for market. There is a tendency

in Ontario to revert to the thick hog. We regret this very much, and trust that the farmers will do something to stem the tide. Mr. Monteith also referred to the weed pest, and regretted the headway which various noxious weeds were making.

We have a tendency as farmers to become isolated from one another, and we too often neglect our duties to those with whom we labor.

The Honorable Minister of Agriculture brought the proceedings to a close by expressing the hope that the delegates would take many valuable lessons and suggestions home with them and apply the same to their local conditions—whether it be in the fruit growing, stock-raising or dairying sections. In all of these lines the possibilities were almost unlimited.

SESSION OF INSTITUTE LECTURERS.

A conference of Institute lecturers was held immediately following the Convention and a number of topics of special interest to speakers were discussed.

It was agreed that three of the most important subjects at present before the farmers of Ontario were:—

(1) That the producers of stock in the various sections of the Province aim to produce definite types in whatever line of breeding they are following,—whether it be horses, cattle, sheep, hogs or poultry. As it is now, there is a lack of system among the producers of live stock, especially those who are not raising pure bred animals.

(2) The introduction of some systematic means for the prevention of the introduction and spread of noxious weeds; also the advisability of greater care and system in the growing and selection of seed grain.

(3) That producers of milk, proprietors of factories and creameries, and makers of cheese and butter, be brought to realize the importance of more thoroughness in producing, manufacturing, storing and marketing their products.

The Superintendent stated that he had secured mounted specimens of 30 of the noxious weeds found in Ontario. Each deputation will be supplied with a set for use at Institute meetings during the season of 1905-6. A pamphlet on methods of eradication, nature of plant, etc. will be distributed at the meetings.

It was agreed that a more general use of charts should be made at Institute meetings, and the Superintendent announced that it was his intention to visit the Department of Agriculture at Washington at an early date and secure such illustrative material as he thought could be used to advantage in Ontario work. This would be supplemented by such additional material as is thought advisable for Institute work in Ontario.

The delegates regretted very much that such a small percentage of young men attended the meetings. It is true that in some sections a large percentage of those in attendance consist of young farmers, but generally speaking, the lack of their presence is quite noticeable. It was thought, therefore, that if local clubs were established upon the lines outlined by the Superintendent, that much would be done to encourage the young men to take an active interest in the work. The delegates expressed an opinion which had often been uttered before, that Saturday meetings should not be held near a large city, and that Saturday evening meetings should be cancelled in all districts.

The lateness of the hour prevented further discussion and as a large percentage of the delegates wished to leave for their homes, it was decided not to hold a session on Friday morning. Much good, however was accomplished by the convention of Institute lecturers, and it is hoped that a similar meeting may be arranged for at the conclusion of the Institute season.

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	Vice-President	W. Guthrie	Warren.
	Sec.-Treas.	John A. Carmichael ..	North Bay.
Norfolk, N.	President	Thos. Herron	Windham Centre.
	1st Vice-President ..	W. A. Byerlay	Courtland.
	2nd Vice-President ..	S. C. Kitchen	Bloomsburg.
	Sec.-Treas.	F. L. Culver	Waterford.
Norfolk, S.	President	James Symington	Port Dover.
	Vice-President	Almon Neilson	Walsh.
	Sec.-Treas.	N. S. Palmerston ..	Walsh.

OFFICERS OF FARMERS' INSTITUTES FOR 1905-6. *(Continued.)*

Northumberland, E.	President	R. O. Morrow	Hilton.
	Vice-President	W. M. Ruttan	Wooler.
	Sec.-Treas.	A. M. Macklam	Brighton.
Northumberland, W.	President	Thos. Hoskin	The Gully.
	Vice-President	A. J. Russell	Cobourg.
	Sec.-Treas.	R. Cullis	Camborne.
Ontario, N.	President	Wm. Shier	Sunderland.
	1st Vice-President	Asa Millard	Altona.
	2nd Vice-President	Walter Lapp	Uxbridge.
	Sec.-Treas.	Jos. E. Gould	Uxbridge.
Ontario, S.	President	J. L. Smith	Whitby.
	Vice-President	James McFarlane	Claremont.
	Sec.-Treas.	Elmer Lick	Oshawa.
Oxford, N.	President	David Lawrence	Thamesford.
	Vice-President	G. A. Munroe	Embro.
	Sec.-Treas.	A. E. Corral	Uxbridge.
Oxford, S.	President	W. A. Elliott	Brownsville.
	Vice-President	J. H. Forden	Beachville.
	Sec.-Treas.	John McKee	Norwich.
Parry Sound, E.	President	John Duke	Burk's Falls.
	Vice-President	W. H. Silvester	Burk's Falls.
	Sec.-Treas.	Thos. Bottomley	South River.
Parry Sound, W.	President	C. Sarvey	Parry Sound.
	Vice-President	W. H. Bundy	Parry Sound.
	Sec.-Treas.	R. Reece Hall	Parry Sound.
Peel	President	Geo. Downey	Castlederg.
	Vice-President	P. G. Dunton	Britannia.
	Sec.-Treas.	T. J. Cumberland	Brampton.
Perth, N.	President	Duncan Forbes	Brocksden.
	Vice-President	Geo. Goetz	Sebringville.
	Sec.-Treas.	S. H. Pugh	Milverton.
Perth, S.	President	Wm. Ray	Bonholm.
	Vice-President	J. W. Pearn	St. Marys.
	Sec.-Treas.	P. S. Armstrong	St. Marys.
Peterboro, E.	President	F. Birdsall	Birdsall.
	Vice-President	E. Hawthorne	Warsaw.
	Sec.-Treas.	Chas. O'Reilly	Norwood.
Peterboro, W.	President	T. V. Hunter	Peterboro.
	Vice-President	J. N. Telford	Bridgenorth.
	Sec.-Treas.	Wm. Collins, Box 926	Peterboro.
Prescott	President	Jonathan Cross	Caledonia Springs.
	Vice-President	J. J. Johnston	Little Rideau.
	2nd Vice-President	Horace Burton	Vankleek Hill.
	Sec.-Treas.	Wm. Macadam	Vankleek Hill.
Prince Edward	President	A. M. Clark	South Bay.
	Vice-President	P. N. Gilbert	Gilbert's Mills.
	Sec.-Treas.	W. A. Christy	Bloomfield.
Rainy River South	President	Geo. Smith	Box Alder.
	Vice-President	John Ritchie	Barwick.
	Sec.-Treas.	Thos. A. Boucher	Em.
Renfrew, N.	President	O. Wright	Beachburg.
	Vice-President	John Collins	Beachburg.
	Sec.-Treas.	John Brown	Beachburg.
Renfrew, S.	President	D. Mairhead	Renfrew.
	Vice-President	Jas. O'Connor	Renfrew.
	Sec.-Treas.	G. MacIntyre	Renfrew.
Russell	President	Hon. W. C. Edwards	Rockland.
	1st Vice-President	D. McDonald	Russell.
	2nd Vice-President	N. F. Wilson, M.P.	Cumberland.
	Sec.-Treas.	W. R. Craig	Russell.
Simcoe, C.	President	H. G. Todd	Randolph.
	Vice-President	Dan. Wood	Orillia.
	Sec.-Treas.	Wm. Pratt	Minesing.
	President	E. W. Kitchen	Perth.
Simcoe, E.	Vice-President	J. S. Nelson	Lavergne.
	Sec.-Treas.	J. R. Hale	Price's Corner.

OFFICERS OF FARMERS' INSTITUTES FOR 1905-6. *Continued.*

Simcoe, S.	President	John Semple	Tottenham.
	Vice-President	J. A. Kidd	Cookstown.
	2nd Vice-President	J. S. Duff	Cookstown.
	Sec.-Treas.	R. A. Thompson	Thornton.
Simcoe, W.	President	W. J. Ovens	Duntroon.
	Vice-President	John Smith	Duntroon.
	2nd Vice-President	J. A. McDermid	Stayner.
	Sec.-Treas.	John McKee	Duntroon.
Stormont	President	Angus Grant	Moose Creek.
	Vice-President	Leslie Foster	Newington.
	Secretary	James Norman	Gravel Hill.
	Ass't Secretary	C. W. Young	Cornwall.
St. Joseph Island	President	Geo. Fish	Carterton.
	Vice-President	F. B. Kent	Richard's Landing
	Sec.-Treas.	Alfred Kitchen	Carterton.
Victoria, E.	President	W. H. Cullis	Powle's Corners.
	Vice-President	Isaac Fee	Mt. Pleasant.
	Sec.-Treas.	Wm. Thurston	Bobcaygeon.
Victoria, W.	President	Wm. Channon	Oakwood.
	Vice-President	Donald Jackson	Woodville.
	Sec.-Treas.	James Keith	Lindsay.
Waterloo, N.	President	Menno S. Snyder	Bloomingtondale.
	Vice-President	A. B. Snyder	Elmira.
	2nd Vice-President	A. Doering	Crosshill.
	Sec.-Treas.	Allen Shantz	Waterloo.
Waterloo, S.	President	J. D. Newstead	Preston.
	1st Vice-President	W. C. Shaw	Hespeler.
	2nd Vice-President	S. S. Herner	Mannheim.
	3rd Vice-President	Walter Oliver	Branchton.
	Sec.-Treas.	Wm. Slater	Galt.
	Ass't Secretary	C. D. Brown	Haysville.
Welland	President	C. T. Ware	Allanburg.
	Vice-President	Chas. E. Sauer	Chippewa.
	Sec.-Treas.	W. H. Gainer	Welland.
Wellington, C.	President	Hugh Semple	Hereward.
	Vice-President	R. J. Kerr	Mimosa.
	Sec.-Treas.	R. D. Nodwell	Hillsburg.
Wellington, E.	President	Samuel Waters	Kenilworth.
	Vice-President	Duncan McKenzie	Cedarville.
	Sec.-Treas.	Albert Hellyer	Kenilworth.
Wellington, S.	President	John Barber	Guelph.
	Vice-President	Wm. Scott	Eramosa.
	2nd Vice-President	J. A. Cockburn	Aberfoyle.
	Sec.-Treas.	G. B. Hood	Guelph.
Wellington, W.	President	W. T. Hamblly	Drayton.
	Vice-President	F. S. Wooddissee	Rothsay.
	Sec.-Treas.	S. M. Clemons	Drayton.
Union	President	Alex. Drummond	Clifford.
	Vice-President	David Campbell	Clifford.
	Sec.-Treas.	John Shoemaker	Clifford.
Wentworth, N.	President	Wm. Emmans	Mountsberg.
	1st Vice-President	T. B. Watson	Kirkwall.
	2nd Vice-President	Geo. N. Harris	Lynden.
	Sec.-Treas.	Jos. Stephenson	Freelton.
Wentworth, S.	President	S. J. Kivel	Lynden.
	Vice-President	John Clough	Binbrook.
	Sec.-Treas.	Erland Lee	Stoney Creek.
York, E.	President	John Kennedy	Agincourt.
	1st Vice-President	Geo. Robinson	Markham.
	2nd Vice-President	J. E. Elliott	Lansing.
	3rd Vice-President	F. J. Bice	Newton Brook.
	Sec.-Treas.	A. J. Reynolds	Scarboro Jct.
York, N.	President	Luke Gibbons	Newmarket.
	Vice-President	Arch. McCallum	Laskey.
	Sec.-Treas.	G. B. Haines, Jr.	Newmarket.
York, W.	President	John Jackson	Elia.
	Vice-President	Thos. A. Farr	Thistletown.
	Sec.-Treas.	Robert L. Crawford	Emery.





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